SAN DIEGO
HARBOR SAFETY PLAN
Approved May 2009

Mandated by

California Oil Spill Prevention and

Response Act of 1990

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EMERGENCY RESPONSE PROCEDURES

In order to provide protection to the sensitive resources in San Diego Bay, it's essential that every effort be made to prevent illegal discharges to the water, and respond to other emergencies that may result in environmental impacts. When such an incident does occur, however, it's critical to make sure it's reported immediately, and to the right agency. The following "user-friendly" guide provides the necessary information.

The vessel master, owner, operator or other responsible party shall take immediate action to contain and control the spill incident, without risking personal health and safety. When on-scene, Coast Guard Sector San Diego (oil spills) or the San Diego Fire Department (HAZ-MAT spills) will assume responsibilities as On-Scene Incident Commander until response actions are complete.

Anyone causing, observing, or discovering a hazadous spill emergency situation CALL IMMEDIATELY:	
1. U.S. Coast Guard Sector San Diego	**(619) 278-7031**
2. State Office of Emergency Services (OES)	**(800) OILS-911 (852-7550)**
3. USCG National Response Center and Terrorist Hotline (NRC)	**(800) 424-8802**
Provide as much information as possible incl uding **location**, **type of material** (if known),**quantity**, **any immediate threat to life or health**, and **any impacts to natural resources**.	

Other Important Agencies to Contact	
S.D. Fire Dept/ Emergency Services	**(619) 974-9891**
Harbor Police	**(619) 686-6272**
Port of San Diego	**(619) 686-6346**
U.S. Navy Port Operations	**(619) 556-1433**
24 Hr. Navy Regional Duty Office	**(619) 524-2314**
U. S. Coast Guard Waterways Management Division	**(619) 278-7262**

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BEST MARITIME PRACTICES

INTRODUCTION

Best Maritime Practices (BMPs) are accepted and agreed upon methods to conduct vessel transits or operations that are necessary for or enhance the safety of vessels, personnel, dockside facilities and marine resources. These BMP's are not to be considered regulations or laws, but "guidelines" to assist the mariner with "local knowledge" while operating in the vicinity of Port of San Diego.

This BMP section has been designed as a quick pullout reference guide for safe and environmentally sound vessel movements and operations in and around the port area. The BMPs that are covered in this section include:

1. Important General Information
2. Pre-Arrival Guidelines
3. Vessel Speed and Wake Management
4. Underkeel Clearance
5. Radio Communication
6. Recreational, Naval and Commercial Vessel Interaction
7. Reduced Visibility
8. Heavy Weather Contingency Plans

These BMPs are intended as a brief guide for the mariners upon San Diego Bay. More detailed and extensive information, regulations and recommendations can be found in the Harbor Safety Plan chapters and on the following websites.

- Port of San Diego, Tariff Information (http://www.portofsandiego.org/maritime/tariff-info.html).
- Port of San Diego, Port and Harbor Conditions (http://www.portofsandiego.org/maritime/check-port-and-harbor-conditions.html).
- NOAA, Office of Coast Survey, Charts and Publications (http://www.nauticalcharts.noaa.gov/staff/chartspubs.html).
- NOAA, Office of Coast Survey, Online Chart Viewer (http://www.nauticalcharts.noaa.gov/mcd/OnLineViewer.html).
- USCG Navigation Rules (www.navcen.uscg.gov/mwv/navrules/rotr_online.htm).
- San Diego Harbor Safety Plan (http://www.portofsandiego.org/maritime/ and http://www.dfg.ca.gov/ospr/commit/hs/hs.html).
- U.S. Customs & Border Protection (www.cbp.gov).

It is important to note that these Best Maritime Practices are not intended to be in conflict nor do they replace existing federal, state, and local regulations that are already in place.

Nothing in these Best Maritime Practices precludes a master or pilot from taking necessary steps and prudent actions to avoid or mitigate unsafe conditions.

1. IMPORTANT GENERAL INFORMATION

- Please be advised that the Port of San Diego lacks a Vessel Traffic System (VTS).
- Marine traffic on San Diego Bay is diverse and extensive. It consists of: Naval vessels of all sizes, cargo ships, cruise ships, research ships, tugboats, excursion vessels, commercial fishing and sport fishing vessels, barges, mega yachts and pleasure/recreation boats of every class.
- Mariners and boaters can expect to find security zones, restricted navigation areas (RNA), special regulated areas and physical barriers to deter unauthorized entry into both water and landside areas of the Port's U.S. naval and military facilities, commercial seaport cargo terminals, cruise ship terminal, and certain other facilities such as sport fishing, harbor excursion and passenger ferry dock areas.
- Maritime Transportation Security Act (MTSA) regulated facilities in San Diego Bay include: National City Marine Terminal, Tenth Avenue Marine Terminal, Port of San Diego Cruise Ship Terminal (B Street Pier, Broadway Pier, Grape Street Piers), and several sport fishing, excursion vessel and research vessel dockings. Detailed information concerning maritime security programs and regulations (MTSA, TWIC, America's Waterway Watch, Facility Security, etc.) can be found at the U.S. Coast Guard's Homeport - Maritime Transportation Security Act (MTSA) website: https://homeport.uscg.mil/mtsa.
- Per the Port Tariff, a pilot is required for vessels over 300 gross tons to enter the port. A pilot is recommended for all other non-recreational vessels upon an initial visit to the Port of San Diego. For more details see the Port of San Diego Tariff website (http://www.portofsandiego.org/maritime/tariff-info.html). There is a process for large private yachts to request exemption from pilotage once they have transited San Diego Bay under the observation of a San Diego Bay Pilot. Contact the San Diego Bay Pilots' Association for more information.

2. PRE-ARRIVAL GUIDELINES

- Notice of Arrivals (NOA) are required for vessels. In general, an NOA is required for any vessel over 300 gross tons, per CFR 33 CFR, Part 160, Subpart C, §§ 160.201 - 160.215. However, there are additional rules for tugs and barges and any vessel carrying certain dangerous cargoes (as defined in 33 CFR §160.204). The timing of required notice is usually 96 hours, but it may be less depending on the vessel's transit. Refer to the regulations to determine your requirements. Failure to follow the regulations will result in controls placed on the vessel, crew and/or passengers by the U.S. Coast Guard and/or Customs & Border Protection.
- A Regulated Navigation Area (RNA) is in place for all of San Diego Bay, Mission Bay and their approaches. Vessels over 100 gross tons must check in with the Captain of the Port or his representative on VHF channel 16 upon entering the RNA as described at 33 CFR §165.1122. The RNA can be seen on NOAA charts 18773 and 18765. Vessels using the Automatic Identification System (AIS) are exempted from this requirement, as described in

33 CFR §165.1108. For additional information see RNA regulations 33 CFR, Part165, subpart B, §§165.10 - 165.13 at the Electronic Code of Federal Regulations website.

- The best source of local information is the Nautical Chart 18773 (Edition 41, Edition Date: 10/1/08) and the U.S. Coast Pilot 7 (41st Edition, 2009).
- Make sure your Automatic Identification System (AIS) is updated properly.
- Please consult the National Vessel Movement Center website at https://www.nvmc.uscg.gov/ and the NOA regulations 33 CFR, Part 160, Subpart C, §§ 160.201 - 160.215 at the Electronic Code of Federal Regulations website.

3. SAFE VESSEL SPEED AND WAKE MANAGEMENT

Safe Vessel Speed

- As a general rule, the areas of San Diego Bay that are not regulated by a speed zone are to be navigated at a safe and prudent speed with regards to Inland Rule 6 of the U.S. Coast Guard.
- Every vessel shall at all times proceed at a safe speed so that she can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.
- In determining a safe speed the following factors shall be among those taken into account:
  - The state of visibility.
  - The traffic density including concentrations of fishing vessels or any other vessels.
  - The manageability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions.
  - At night, the presence of background light, such as from shoreline lights or from the back scatter of the vessel's own lights.
  - The state of wind, sea and current, and the proximity of navigational hazards.
  - The draft in relation to the available depth of water.
- South San Diego Bay is governed by a 5 mph speed limit. This is the area delineated by concrete pylons and posted with 5 mph signs. Areas near anchorages are also 5 mph.
- All lagoons are posted as 5 mph zones. These include the Shelter Island Yacht Basin, the America's Cup Harbor, Harbor Island West and East Lagoons, and Glorietta Bay.
- For more information about speed limits please consult Coast Pilot 7 (41st Edition, 2009) for San Diego Bay (http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm) and the Port of San Diego, Tariff Guidelines, Section IV – Rules and Regulations (Vessels) at http://www.portofsandiego.org/maritime/tariff-info.html.

Wake Management

- Generating large wakes can cause excessive damage (and possibly loss of life) at other marine operations on the bay. Every mariner needs to consciously and consistently manage the wake being generated. A large wake would have dangerous impacts on the following areas: near a fuel dock or where a commercial bunkering operation is taking place; while passing a tugboat alongside a ship or barge; near a dry dock operation; by an operating floating crane; and near a dock where passengers are embarking or disembarking a vessel, such as at the Coronado Ferry Terminal.
    - In most cases a reduction of speed will reduce the size of the wake generated.
    - Listen for no wake "securite" calls on VHF 16 and VHF 13.
    - During bunkering operations make a "securite" call and request a no wake zone.

4. UNDERKEEL CLEARANCE

- An Underkeel Clearance of a minimum of 4 feet is required for ship channel entrance, a minimum of 2 feet is required for main ship channel and a minimum 1 foot is required alongside the berth.
- If a vessel is being moored when the height of tide is critical to keep this vessel in compliance with these under keel clearance guidelines, the vessel's representative should communicate the operations and contingency plan to the Port of San Diego and USCG Captain of the Port.

5. RADIO COMMUNICATIONS

- All commercial vessels should stand by VHF channels 16 and 13 at all times while underway on San Diego Bay. Calling bridge to bridge via channel 13 initially is most efficient.
- Recreational vessels with VHF radios are encouraged to monitor 16.
- US Navy "Control One" monitors channel 12 and can be a good source for current Naval traffic.
- "Securite" calls on channels 16 and 13 are recommended for commercial vessels operating on the bay.

6. RECREATIONAL, NAVAL AND COMMERCIAL VESSEL INTERACTION

"Interaction" implies radio communications, effects of wakes, sound signals, traffic patterns, and blinding halogen deck lights.

At all times, the Inland Navigational Rules are applicable to all of San Diego Bay and Mission Bay (33 C.F.R. 80.01 and 33 C.F.R. 80.1106). The Inland Navigational Rules are found at 33 U.S.C. §§ 2001-2073. Furthermore, because the Inland Navigational Rules apply to personal water craft (see 33 U.S.C. § 2003 for definition of "vessel"), operators of personal water craft must comply with the Inland Rules of Navigation in Mission Bay and San Diego Bay.

San Diego Bay and USCG Rule 9

- Recreational vessel operators should be sensitive to the fact that large commercial and naval vessels are severely limited in their ability to stop or alter course and many times are limited in their ability to sight small vessels due to "blind spots" that extend more than 1/2 mile ahead, and therefore cannot easily avoid a collision with a smaller, more maneuverable recreational vessel. For your safety, please use caution when crossing their path or when navigating in close proximity to large commercial vessels or navy vessels.

- Small vessels, according to Rule 9, shall remain clear of large commercial and naval vessels that for navigational safety and the practice of prudent seamanship navigate primarily within the main channel. Tugs with tows have limited maneuverability. Be aware of ships and tugs coming up behind you in the main channel.

- Per the Coast Guard Captain of the Port, the shipping channels of San Diego Harbor are considered "Narrow Channels" for the purposes of enforcing Rule 9 of the Inland Navigation Rules, which states:

  "A vessel of less than 20 meters (66 feet) in length, or a sailing vessel shall not impede the passage of a vessel that can safely navigate only within the narrow channel or fairway." (USCG Inland Navigation Rules, Rule 9 (b)).”

- An action such as crossing in front of a large vessel (i.e. Naval Vessels, Cargo Ships) is also a violation if such a crossing impedes the travel of one of these vessels. Please remember that these vessels can take up to two miles to come to a stop, and they cannot turn to avoid a potential collision.

- For more information about Rule 9 requirements for small craft vessels and sailboats operating in San Diego Bay please consult the Coast Pilot 7 (41st Edition, 2009) for San Diego Bay (http://www.nauticalcharts.noaa.gov/nsd/cpdownload.htm) and the Port of San Diego Tariff Guidelines, Section IV - Rules and Regulations (Vessels) at http://www.portofsandiego.org/maritime/tariff-info.html.

Guidelines for Small Craft to Ensure Safe Operation

- Recreational vessels should follow the Guidelines for Small Craft listed below to ensure the safe operation of their craft while in and around the port.

  (1) Do not approach within 100 yards of a US Naval vessel. You must operate at a minimum speed within 500 yards of a US Naval vessel.

  (2) Know and Comply with Rule 9.

  (3) Pass tugs and large vessels at a safe distance.

  (4) Ensure critical systems and equipment aboard your vessel are functioning.

  (5) Know your vessel’s position.

  (6) Monitor (Listen to) VHF Channel 16 at all times while underway.

  (7) Understand VHF Radio Use.

  (8) Listen for Coast Guard Information Broadcasts.

(9) Know that commercial vessels also monitor Channel 13.

(10) Know that naval vessels also monitor Channel 12.

(11) Wear PFDs or have them readily accessible.

(12) Know how to identify Coast Guard and other law enforcement vessels.

(13) Know the danger signal.

(14) Be aware of potential damage and injury caused by your vessel's wake.

(15) Read the Coast Guard Notice to Mariners.

(16) Know the local aids to navigation and the local hazards to navigation.

(17) Know what to do to be safe in the fog and at night.

(18) When you head offshore know when you have crossed into Mexican waters and how to clear U.S. Customs & Border Protection requirements when you return to San Diego Bay.

7. REDUCED VISIBILITY

- The Coast Pilot 7 (41st Edition, Chapter 4, page 268, paragraph 47) provides the following reduced visibility guideline that was adopted by the SD Harbor Safety Committee in 1997-1998:

  > "No vessel over 1600 designed displacement tons should transit the Coronado Bay Bridge in low visibility if the bridge is not held visually within stopping distance. Tank ships or barges carrying petroleum products, explosives, or hazardous materials should not commence a movement in the approaches to or in outer or inner San Diego Harbor, with a visibility of less than 0.5 nautical miles (1,000 yards)."

- The Coast Pilot 7 (41st Edition, chapter 4, page 268, beginning with paragraph 43) offers the mariner excellent weather info for San Diego Bay.

- Localized current conditions can be found by listening to VHF radio channel WX2.

8. HEAVY WEATHER CONTINGENCY PLANS

- All companies and vessels are recommended to have a contingency plan in dealing with heavy weather in San Diego. All commercial maritime operators in San Diego should have heavy weather plans developed to ensure safety.

EXECUTIVE SUMMARY

INTRODUCTION

The San Diego Harbor Safety Plan (SD HS Plan) is designed to provide mariners using the waters of San Diego Bay an up-to-date guide to critical navigation issues that will enhance vessel safety, with the ultimate goal of pollution prevention and protection of the region's valuable resources.

This plan has been developed by the San Diego Harbor Safety Committee (HSC) as mandated in the California Oil Spill Prevention and Response Act of 1990 (OSPR Act of 1990), (Government Code Sections 8574.1 *et seq.*). The goals of the OSPR Act are to improve the prevention, removal, abatement, response, containment, clean up, and mitigation of oil spills in the marine waters of California.

The OSPR Act and its implementing regulations (California Code of Regulations Title 14 Sections 800-802) created harbor safety committees for the major harbors of California[1] to "plan for the safe navigation and operation of tankers, barges, and other vessels within each harbor….(by preparing)….a harbor safety plan, encompassing all vessel traffic within the harbor."

The San Diego Harbor Safety Committee (SD HSC) was officially sworn in on May 13, 1992 and held its first meeting on that date. The first SD HS Plan was submitted to OSPR and approved on July 28, 1993. The OSPR Act and its implementing regulations mandate that the SD HSC annually review its previously adopted Plan and recommendations and submit the annual review/update to the Administrator of the Office of Spill Prevention and Response (OSPR) for review.

SCOPE OF THE HARBOR SAFETY PLAN

The San Diego Harbor Safety Plan is primarily concerned with navigational safety of San Diego Bay and its approaches. The San Diego Harbor Safety Planning area includes all the navigable reaches of San Diego Bay and state waters out to three nautical miles extending from the Mexican border at 32° 32.0' N northward to the San Diego County line at 33° 22.5' N. These boundaries coincide with the boundaries of the US Coast Guard (USCG) Area Contingency Plan[2]. The Figure 1 map shows the regional area covered by the SD Harbor Safety Plan. The Figure 2 map shows harbor details inside San Diego Bay.

[1] Harbor Safety Committees were established for the five major harbors of California: San Diego Bay, San Francisco Bay (including San Pablo and Suisun Bays), Los Angeles/Long Beach harbors, Port Hueneme, and Humboldt Bay.

[2] The federal Oil Pollution Act of 1990 (OPA 90) resulted in the formation of Area Committees and their development of a Regional Oil Spill and Hazardous Substance Pollution Contingency Plan by the U.S. Coast Guard (Area Contingency Plan). The Area Committees ensure that comprehensive contingency plans are developed for all U.S. waters for response and cleanup of all oil spills. The Area Contingency Plan is the plan for Federal and State actions which center on the on-scene coordinator for response to oil spills. The designated Federal On-Scene Coordinator is the U.S. Coast Guard Captain of the Port.

Figure 1: The San Diego Harbor Safety Planning Area
Note: Map is not to be used for navigational purposes

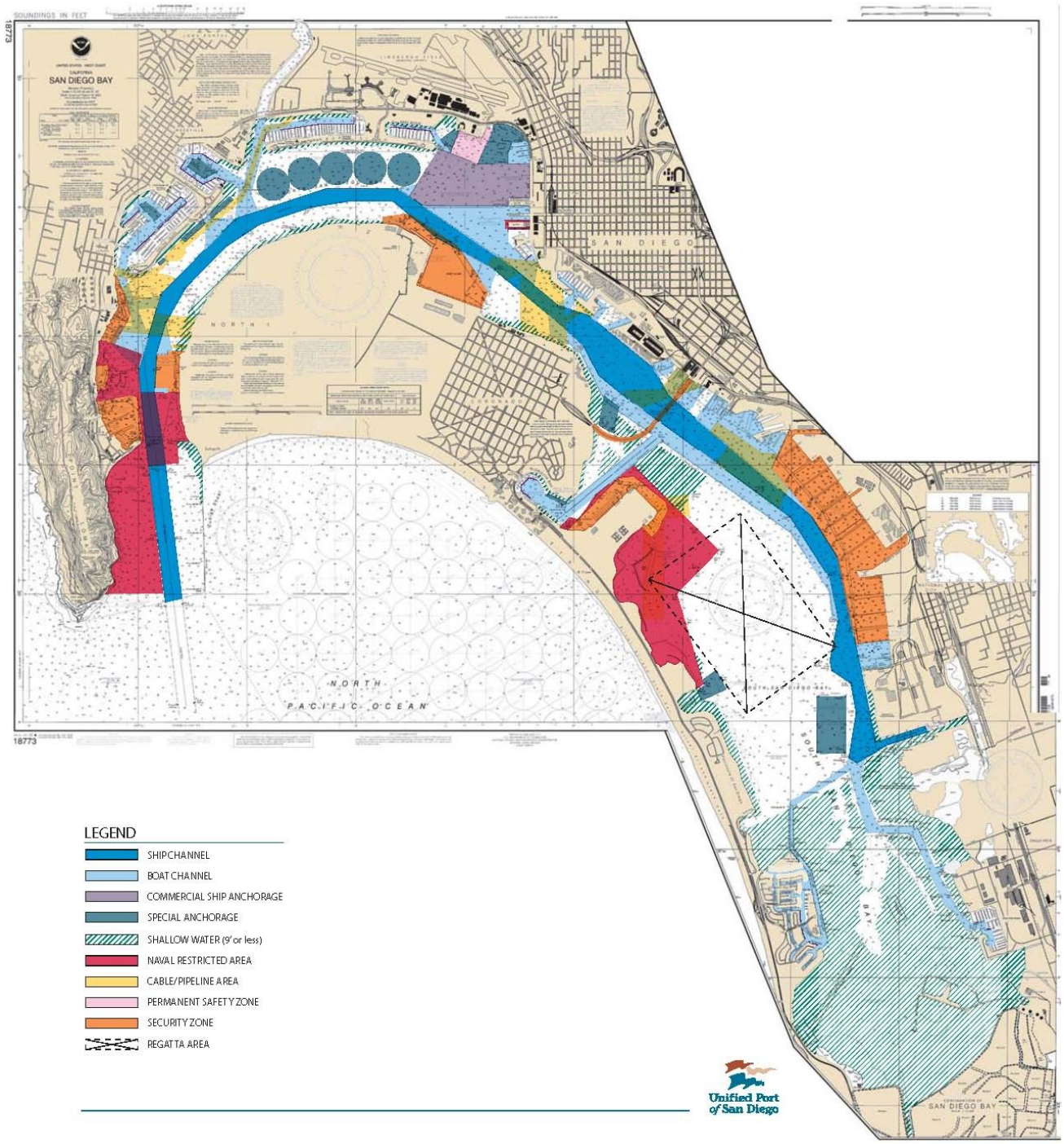


Figure 2: San Diego Bay Harbor
Note: Map is not to be used for navigational purposes

The San Diego Bay entrance is 10 miles NW of the Mexican border. The Bay encompasses 12,000 acres and is 14 miles long and, at half-tide, has an area of 18 square miles and a water volume of 300 million cubic yards. It's depth ranges from 55 feet deep at the entrance to a few feet deep at the extreme southern end. The Bay is considered one of the finest natural harbors in the world, and affords excellent protection in most weather. A low narrow sand spit, which expands to a width of 1.6 miles at Coronado North Island, on its northern end, separates the Bay from the Pacific Ocean at Coronado Road.

The Bay lies entirely within the County of San Diego and is bounded by five cities: San Diego, National City, Chula Vista, Imperial Beach, and Coronado. Ecologically, San Diego Bay is considered one of the most important embayments of the California coast and has nationally and internationally significant natural resources. The Bay is a major stop on the Pacific Flyway and many species of birds, finfish, shellfish, turtles, bottom-dwelling invertebrates, and plants are dependent on the Bay. Over 50 endangered, threatened, or rare species are found in the Bay.

San Diego Bay's extensive shelter from ocean waves makes it one of the finest natural harbors in the world. Three separate marine terminals provide facilities for a variety of commercial cargo handling and cruise ship operations. Principal cargo includes fresh and frozen foodstuffs, lumber, bulk cargo, cement, sand, fertilizer, automobiles, steel cargos, containers, and fuel oil. Passenger cruise ships also frequent the harbor on a daily basis. A total of 594 voyages by deep draft commercial cargo vessels and cruise ships, representing 1350 transits in and out of San Diego Bay, occur annually.

The Navy has designated San Diego Bay as a West Coast 'megaport.' The Port of San Diego is also designated as a Strategic Port for the deployment of the United States' Armed Forces military cargoes in support of national defense. Half of the U.S. Naval Pacific Fleet is home ported in the Bay, making it instrumental in our national defense.

The San Diego area is also a major tourist and convention destination. As host of past America's Cup races, San Diego Bay has established itself as a sailing and yachting center in California. Recreational boaters for the San Diego/Mission Bay area have been numbered at 200,000. The Bay is also home to a large sport fishing and whale migration observation fleet. The Pt. Loma kelp bed, near the mouth of the Bay, is world famous as a diving, snorkeling, and surfing location.

Planning for safe navigation within San Diego Bay area involves consideration of a complex variety of inbound and outbound commercial cargo vessels, cruise ships, Navy vessels, recreational boats, commercial and sports fishing boats, all of which must transit in and around restricted military zones, commercial vessel lanes, environmentally sensitive areas, and recreational areas.

SUMMARY OF THE HARBOR SAFETY PLAN

It is recommended that mariners using San Diego Bay familiarize themselves with the Harbor Safety Plan, although it is not to take the place of required vessel navigation and safety standards.

The OSPR Act of 1990 required the HSC to prepare a Harbor Safety Plan to evaluate the following:

- Sounding checks.
- Anchorage designations.
- Traffic and routings from port construction and dredging projects.
- Procedures for routing vessels during emergencies that impact navigation.
- Communications systems.
- Channel design plans.
- Placement and effectiveness of navigational aids.
- Bridge management requirements.
- Small vessel congestion in shipping channels.
- Recommendations as to whether establishing or expanding the VTS systems within the harbors is desirable.
- Recommendations for funding projects.

The San Diego HS Plan is divided into sixteen chapters and a set of appendices to address the above requirements. The appendices provide specific information on key issues and initiatives that affect vessel safety in San Diego Bay. To facilitate the use of this plan, the primary sections and general information are contained in the main body of the plan.

A summary of the HS Plan sections is provided below:

- **Emergency Response Procedures**
- **Best Maritime Practices**

I. **Geographic Boundaries.** A detailed description of the geographical boundaries of the harbor.

II. **Harbor Conditions.** A description of existing and expected conditions of weather, tidal ranges, and other factors.

III. **Aids to Navigation and Navigational Hazards.** An evaluation and list of the aids to navigation in the harbor, and list of navigational hazards.

IV. **Anchorage and Anchorage Management.** A description of the existing anchorages and any limitations to those anchorages.

V. **Communications.** A review and evaluation of the adequacy of current ship-to-ship and ship-to-shore communications used in the harbor area.

VI. **Vessel Traffic Patterns.** A description of the types of vessels which call on the ports or facilities within the harbor area, and an assessment of current safety issues.

VII. **Tug Escort/Tug Assist.** A description of the usage of tug escorts in the harbor, including a procedure for a case-by-case determination of need, based on specific criteria.

VIII. **Vessel Traffic Service.** A description of the San Diego Marine Information Systems (SDMIS) for the harbor area.

IX. **Bridge Management Requirements.** An assessment of the physical limitations affecting vertical and horizontal clearances.

X. **Competitive Aspects.** An identification and discussion of the economic impacts of implementing the provisions of the plan.

XI. **Project Funding.**

XII. **Enforcement.** An analysis of, and suggested mechanisms to, ensure that the provisions of the plan are fully and uniformly enforced with regularity.

XIII. **Harbor Safety Committee Recommendations and Accomplishments.** Includes Recommendations and actions taken to implement recommendations.

XIV. **Implementation.** Provides an overview of implementation avenues for the recommendations contained in the Harbor Safety Plan.

XV. **Applicable Regulations and Guidelines.** Includes Underkeel Clearance Guidelines, Non-Tank Oil Spill Contingency Plan regulations, and Tug Escort regulations.

XVI. **Miscellaneous.** Pilotage Evaluation Report, Ballast Water Regulations, Limited Visibility Guidelines, and Underwater Pipelines.

Appendices A-O, including list of Archived Items.

SAN DIEGO HARBOR SAFETY COMMITTEE ORGANIZATION AND MEMBERSHIP

The San Diego HSC consists of representatives from the following: Port of San Diego, pilot organization, pleasure/recreational boaters, tank-barge operators, environmental organization, tug/barge operators, labor organization, excursion vessels, maritime law, tug escort/ship assist operators, ships agents, commercial fishing, U.S. Coast Guard, U.S. Navy, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Association, and California Coastal Commission. The Office of Spill Prevention and Response is the administrative liaison. A complete list of the HSC members is included in Appendix A.

The full committee meets every two months; with Chairman-appointed subcommittees meeting on an on-going basis. The sub-committees consist of special focus groups that review appropriate subject matter, and make recommendations to the full committee.

All meetings are open to the public and are posted at the Port of San Diego Administration Building, and on the OSPR website (http://www.dfg.ca.gov/ospr/commit/hs/hs.html). The OSPR website also has a list of the current Committee members, an archive of past meeting minutes, and the OSPR Act of 1990 and its implementing regulations governing the Harbor Safety Committees.

The Harbor Safety Committee/Harbor Safety Plan process is a long term, on-going effort requiring continual work to address navigation and boating issues in the SD Bay area, with annual HS Plan updates. The latest version of the SD HS Plan can be found on the OSPR website (http://www.dfg.ca.gov/ospr/commit/hs/hs.html) and on the Port of San Diego website (http://www.portofsandiego.org/maritime.html.

One of the key elements of the SD HSC's charter is to make recommendations for improvements, and track those recommendations. For a complete summary of current recommendations made by the HSC, turn to Chapter XIII. A summary of implemented Harbor Safety Committee recommendations is also included in that chapter.

General Information about San Diego Bay

General information about San Diego Bay and ocean conditions is available from the following agencies.

Agency	Phone
The San Diego Unified Port District www.portofsandiego.org/maritime.html	(619) 686-6200
San Diego Coastkeeper http://www.sdcoastkeeper.org	(619) 758-7743
The Environmental Health Coalition http://www.environmentalhealth.org	(619) 474-0220
The San Diego Convention and Visitors Bureau www.sandiego.org	(619) 232-3101
San Diego Bay Project http://www.sdbay.sdsu.edu/	

The following agencies have additional navigation and ocean resource information as well as specific federal, state, and local requirements for oil spill response, containment, clean-up and restoration.

Agencies with oil spill response, navigation and ocean resource information	Phone
Office of Oil Spill Prevention and Response http://www.dfg.ca.gov/ospr	(800) 911-OILS (916) 445-9338
U.S. Coast Guard, Sector San Diego http://homeport.uscg.mil/sandiego	(619) 295-3121 or VHF Channel 16
National Response Center (oil spill report)	800-424-8802
Port of San Diego http://www.portofsandiego.org/maritime.html	(619) 686-6200
OES: Governor's Office of Emergency Services	(800) OILS-911 (800) 852-7550
NOAA http://www.wrh.noaa.gov/sgx	(831) 583-2365
U.S Navy Port of Operations	(619) 556-1433

I. GEOGRAPHICAL BOUNDARIES

As shown in Figure 1 above, the San Diego Harbor Safety Plan study area includes all the navigable reaches of San Diego Bay, Mission Bay and state waters out to three nautical miles extending along the coast of San Diego County from the Mexican border at 32° 32.0' N northward to the San Diego County line at 33° 22.5' N. These boundaries coincide with the boundaries of the San Diego Area Contingency Plan. The San Diego Harbor Safety Plan is concerned with navigational safety of San Diego Bay and its approaches, Mission Bay, and the waters along the San Diego Coast.

Approaches to San Diego Bay entrance are straightforward and can be made from north through west to south-southwest. There are no designated approach lanes to the entrance Buoy "SD". There are submarine safety lanes designated on Chart #18765 and the U.S. Navy does extensive surface, subsurface, and air training off the coast. All live fire and intensively interactive naval exercises are held well off the immediate coastline and do not encroach on the vicinity of the harbor approaches.

The following table lists the nautical charts for the San Diego Bay region.

NOAA Charts for San Diego Bay Area	
Chart Number	**Chart Name**
18772	Approaches to San Diego Bay (harbor chart)
18773	San Diego Bay (harbor chart)
18765	Approaches to San Diego Bay (coast chart)
18740	San Diego to Santa Rosa Island (coast chart)
NOAA's chart site: **http://www.nauticalcharts.noaa.gov/mcd/OnLineViewer.html**	

II. HARBOR CONDITIONS

GENERAL WEATHER, TIDE, CURRENT, AND SEA CONDITIONS OF SAN DIEGO HARBOR

Weather

In the San Diego Bay area, visibility is reduced to less than 0.5 mile, mostly by radiation fog, on about 3-7 days per month from September through April. December is the foggiest month with the worst fog during the late night and early morning hours. Dense fog occurs frequently at North Island and Imperial Beach. Fog signal records indicate that, in general, it is foggier around the entrance of the Bay than it is in the North sections. For example, the fog signal at Point Loma in December is operating about 20% of the time compared to 10% at Ballast Point.

Winds in the area are strongest from November through April when they blow 17 knots or more about 2% of the time. In general, daily (diurnal) winds all year are strongest from the northwest at about 5-12 knots and mainly associated with the afternoon sea breeze. The exceptions are as follows:

- During the summer, the winds during a strong Catalina Eddy can be just as strong as the afternoon sea breeze.

- The strongest winds (for example, gusts in excess of 20 knots) are almost always reported during the October-March period due to pacific storms (typically south through west in direction), and although infrequent, Santa Ana Winds (north to northeast in direction).

Gales are rare. Wind gusts have reached 50 knots or more during the winter season. Strong winds often blow in a Southerly direction, but they also blow from West and East along the coast. Winds are often affected by local topography, particularly when the flow is off the land. For example, at Imperial Beach, East winds blow 15-20% of the time from November through March. During the late spring and summer, South through Northwest winds prevail at both locations. However, at the more exposed Imperial Beach, West winds occur up to 25% of the time whereas the flow is more variable at San Diego. By October, the wind regime begins to reestablish itself.

Prevailing wind during winter months is Northwest to North, force 4 (11-16 knots). Prevailing wind during the summer months is West to Northwest, force 4 (11-16 knots).

For more information contact: National Weather Service, (619) 2891212, VHF Channel 2 (162.40 MHZ), www.wrh.noaa.gov/sgx/.

Tides

San Diego Bay is free of excessive tidal ranges. The mean range of tide is 4.0 feet at San Diego, and the diurnal range of tide is up to 10 feet. Daily predictions in Tide Tables format can be obtained from local agencies or business. Real time tides and tide predictions can be found at the NOAA National Ocean Service website: http://tidesandcurrents.noaa.gov.

Currents

The currents set generally in the direction of the channels. In the vicinity of the Bay's entrance the usual velocity varies from 0.5 to an extreme of over three knots depending upon the stage of the tide and weather conditions. South of the end of Zuniga Jetty there is a slight set toward Zuniga shoal on the ebb tide. There is a crosscurrent deflected from Ballast Point—care should be taken while passing Ballast Point because a vessel may take a sudden sheer.

Eddies are usually encountered along the ends of the municipal piers making docking difficult. The velocity and direction of the eddies are irregular, and the greatest care must be exercised by even the most experienced vessel operator. Those unfamiliar with San Diego Bay should not attempt to dock large vessels without a pilot.

Calculated tidal currents of various berths within San Diego Harbor are:

- Naval Fuel Depot: up to 2.4 knots.
- Naval Supply Center: up to 1.8 knots.
- 10th Avenue Terminal: up to 2.1 knots.
- 24th Street Terminal: up to 1.2 knots.

Predictions for tidal currents are posted at NOAA National Ocean Service website: http://co-ops.nos.noaa.gov/curr_pred.html.

Sea Conditions

Approaches: The approaches to San Diego (from sea to buoys 5 and 6) and the main channel entrance (buoys 5 and 6 to buoys 9 and 10) are open roadsteads (see NOAA Chart 18722). Ground swells and seas can combine to a sea state reaching 15' with isolated reports of 20'. The recorded minimum sea state is 1.378'; maximum sea state is 15.388' and mean sea state is 3.688'. Ground swells from the Southwest to West and largest ground swells from the West to Northwest can reach in as far as buoys 9 and 10. Extreme sea states from the Southwest can be felt as far in as the Naval Fuel Depot at La Playa.

Inner Harbor: All other inner harbor areas are not subject to ground swells. On rare occasions extreme weather from the southwest across the longer reaches of the South Bay can generate a sea state of 4' in an area from northern 32nd Street Naval Station to 10th Avenue Marine Terminal.

Wakes: Wakes from large and small vessels are encountered in all areas of the harbor. The greatest amount of wake activity is in the Ballast Point area and diminishing as one proceeds farther in the harbor down to the 24th Street Terminal.

DESCRIPTION OF HARBOR DEPTHS, BERTHS, DREDGING, CHANNEL CONDITIONS

Channel and Anchorage Depths

The dimensions of San Diego Harbor are defined by the 1968 River and Harbor Act (House Document 365, 90th Congress and 2nd Session) and maintained by the U.S. Army Corps of Engineers, Los Angeles District.

The US Army Corps of Engineers (USACE) determines the depth of parts of navigable channels, anchorages and turning basins. Maintenance dredging is performed by the USACE periodically to restore depths to design specifications. The methods, procedures, and frequency of when soundings are conducted within San Diego Bay and its approaches are considered adequate.

The channel depths are as follows:

a. 51 feet from Buoy 4 to Buoys 9/10 for a width of 800 feet.

b. 47 feet to the carrier turning basin for a width of 600-800 feet.

c. 47 feet in the carrier turning basin.

d. 42 feet in Central Bay first section for a width of 600-1900 feet from the turning basin to the Coronado Bridge.

e. 37 feet in Central Bay second section for a width of 600-1900 feet from the Coronado Bridge south to Naval Station Pier13.

f. 35 feet in the south bay for a width of 600-1350 feet southward from Pier 13 to Sweetwater Channel.

Additionally, two adjacent anchorage areas are included in the harbor design. They occupy the area between Harbor Island and the North Bay Channel. The design depth of the western section is 26 feet and the design depth of the eastern section is 36 feet.

Berths

As San Diego Bay does not have any major navigable tributaries, silting conditions alongside berths used by tankers are negligible.

1. The U.S. Navy currently has an established program for regular, periodic hydrographic surveys of its berths. The U.S. Navy tanker berthing facilities consist of:

   (a) The Defense Fuel Support Point at Point Loma, also known as the La Playa fuel pier, primarily served by Military Sealift Command transport tank vessels.

   (b) The South “Sierra” pier at Naval Base Point Loma.

(c) Various berths at Naval Base San Diego depending on vessel drafts.

(d) Various berths at Naval Base Coronado.

2. Contact the Unified Port District of San Diego for information on location and berthing depths for the commercial vessel berthing facilities used by tanker vessels.

Maintenance Dredging For Safe Navigation

The USACE conducts its hydrographic condition surveys of the federal navigation channel annually. Recent surveys showed a few high spots within the federal channel that require maintenance dredging. The Corps of Engineers will request funding to initiate sediment testing and design efforts for the maintenance dredging. Funding for dredging projects depends on the annual federal budget. Planned dredging operations include the entrance and approach navigation channels from Ballast Point seaward, as well as in the aircraft carrier turning basin adjacent to Coronado Island.

Special Channel Conditions

San Diego Bay channel depths are a nominal 51+ feet at the entrance and 37 feet to the Naval Station. At the entrance to the buoyed channel from the vicinity of Buoys 5 and 6 to the vicinity of Buoys 9 and 10 there can be swell action which may cause difficulties to inbound vessels.

SPECIAL NAVIGATION CONDITIONS

There is a single bridge spanning San Diego Bay. The San Diego/Coronado Bridge has a charted vertical clearance of 195 feet between the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

The U.S. Coast Guard has the legal authority to restrict movement for special contingencies and has procedures for establishing security and safety zones. Alternate routing of vessels is determined on a case-by-case basis by the U.S. Coast Guard Captain of the Port. Circumstances that might require the Captain of the Port to exercise this authority include a change in the Maritime Security Condition to address an urgent security threat, or to keep mariners aware from a safety hazard such as a chemical spill or fire on a ship.

MARITIME SECURITY CONDITIONS & MARITIME TRANSPORTATION SECURITY ACT OF 2002

Per the Maritime Transportation Security Act of 2002, the Coast Guard may change the local Maritime Security Condition (MARSEC). Regulated facilities and vessels must immediately increase their security posture and report attainment to the Coast Guard.

- MARSEC I is the lowest security level.

- MARSEC II would be set if there is a threat to the port, or if there has been a security incident somewhere else. Restrictions would depend entirely on the threat or incident. The restrictions may range from fairly unobtrusive to operation controls on facilities or vessels that have significant impact.

- MARSEC III would be set for an attack on the port, an imminent attack, or a serious security threat. It will require significant security restrictions, with a possibility of complete port closure.

For more information about planning for these contingencies, contact 619-278-7262.

Security Requirements for Commercial Vessel Operations

The Maritime Transportation Security Act of 2002 (MTSA) specifies security requirements encompassing commercial port and vessel operations. MTSA regulated facilities in San Diego Bay include: National City Marine Terminal, Tenth Avenue Marine Terminal, Port of San Diego Cruise Ship Terminal (B Street Pier, Broadway Pier, Grape Street Piers), and several sport fishing, excursion vessel and research vessel docking facilities The MTSA regulated facilities and vessels operate in accordance with Facility Security Plans (FSPs) and Vessel Security Plans (VSPs), respectively, which are reviewed and approved by the Coast Guard. The FSP's for the regulated facilities specify access control and security measures to reduce the risk of terrorist actions. Entry into a regulated facility without authorization, from both land side or water side, is strictly prohibited.

Transportation Worker Identification Credential (TWIC)

The TWIC is a federally mandated security program through which the Transportation Security Administration will conduct appropriate background investigations and issue the biometrically enabled and secure TWIC cards. Effective April 15, 2009, individuals must possess a TWIC and have a bona fide business need for entry in order to have unescorted access onto any MTSA regulated facility or MTSA regulated vessel. In addition, all mariners that hold a license or document issues by the Coast Guard must also have a TWIC. TWIC program and enrollment information can be found at www.tsa.gov/twic or by calling 1-866-347-8942.

Visitor Escort Requirements

Visitors and persons not holding a TWIC may enter regulated facilities and regulated vessels when escorted by an individual who holds both a TWIC and authorization of that facility or vessel to serve as a TWIC escort, maintaining side-by-side accompaniment and monitoring of the visitor throughout his/her stay on the facility or vessel.

III. AIDS TO NAVIGATION

EVALUATION OF NAVIGATIONAL HAZARDS

Areas of possible navigational concerns are referenced in the Coast Pilot 7 and current NOAA Charts. Mariners should report any discrepancies in Aids to Navigation to the U.S Coast Guard, Sector San Diego

The waters of San Diego Bay are charted on NOAA Charts 18772 and 18773. The charts include extensive depth soundings and depict locations of various wrecks and obstructions. The entrance to San Diego Bay is through a narrow buoyed channel roughly defined by Point Loma to the west and North Island to the east. Up-to-date NOAA nautical charts are considered adequate for transiting San Diego Bay.

San Diego Bay Approach Lighted Whistle Buoy "SD"

Arriving vessels generally steer on Buoy SD for their approach and then navigate a course, leaving the buoy on their port side to line up on the entrance channel. Departing vessels use Buoy SD as a mark for course changes and leave Buoy SD to starboard. This creates a potential close quarters crossing or meeting situation between arriving and departing vessels. Additionally, arriving ships navigating on southerly courses may experience a change in steering response after rounding Buoy SD because of prevailing sea swell conditions. This may delay the time it takes an arriving vessel to steady-up on its new course entering San Diego Bay and intensify a close quarters situation with vessels departing San Diego Bay.

Radio Beacons

During low visibility recreational and fishing boats often converge around buoys and wait for the weather to clear. A problem is created for larger vessels as standard radar cannot distinguish between marks which are buoys and those which are boats. Two RACONs are now operating on the San Diego/Coronado Bay Bridge and one on the San Diego Bay Approach Lighted Whistle Buoy "SD".

Channel Entrance Range Lights and Buoy Lights

For vessels with low bridge elevations, range and buoy lights are difficult to see at night because of the ambient light of the City of San Diego.

Zuniga Jetty

Since the construction of Zuniga Jetty, it has submerged and become dangerous. The five signs placed at different locations along Zuniga Jetty to mark its location are ambiguous. In low visibility, their similarity of appearance could lead to a misinterpretation of the location of a sign and a resultant inaccurate estimate by a vessel of its location in the main entrance channel. During high tides and low visibility conditions, vessels have become stranded on the jetty. Zuniga Jetty is listed as a danger to navigation in US Coast Pilot 7, depicted on chart 18773 as submerged, and noted in "*A Guide to Boater Safety*" for San Diego Bay.

ACTION SUMMARY ON AIDS TO NAVIGATION

1. The U.S. Coast Guard completes a Waterways Analysis and Management Survey (WAMS) every five years. The last WAMS was conducted in 2004 and is included in Appendix O. In 2009 the Coast Guard will complete a WAMS of Mission Bay, South San Diego Bay and the basins (Shelter Island and Harbor Island) in the bay. Two subsequent WAMS wills review the main channel of San Diego Bay, and Oceanside / Del Mar.

2. The Eleventh Coast Guard District publishes any temporary or permanent changes to Aids to Navigation in the weekly **LOCAL NOTICE TO MARINERS.** Use this Local Notice to Mariners to keep charts and Light Lists current. Important information which missed the weekly printing deadline is disseminated by a Broadcast Local Notice to Mariners on VHF Channel 22A.

3. To obtain the **LOCAL NOTICE TO MARINERS** contact:

   Commander (dpw)
   Eleventh Coast Guard District
   Bldg. 50-6
   Alameda, CA 94501-5100
   (510) 437-2976 Fax: (510) 437-5836
   Internet Site: www.navcen.uscg.gov/lnm/d11/

   To submit Information: http://www.uscg.mil/d11/DP/LnmRequest.asp

4. **THE LIGHT LIST** can be obtained from local agents, nautical bookstores, or:
   Superintendent of Documents
   U.S. Government Printing Office
   Washington D.C. 20402
   Internet site: http://www.nga.mil/portal/site/maritime/
   (select USCG light list from menu drop down)

5. A source of 24-hour information is **Navigation Information Service Watchstander** at: (707) 313-5900.

6. **Private Aids to Navigation Information** can be obtained at: (510) 437-2983.

IV. ANCHORAGES AND ANCHORAGE MANAGEMENT

GENERAL PROCEDURES

Berthing for commercial vessels generally is available without delay at the Port of San Diego. When anchoring of a commercial vessel is required inside the harbor, pilots generally assist these vessels to a suitable anchorage.

Mooring is allowed only in designated areas. It is of concern to the SD HSC that anchor lights are not required by certain length vessels in special anchorage and certain other areas as specified in Rule 30, "*Inland Navigation Rules."*

The federal anchorages for San Diego Bay are set by 33 CFR §110.210. There are three anchorage grounds; two for government vessels and one for commercial vessels. They are described below.

SPECIAL ANCHORAGES FOR U.S. GOVERNMENT VESSELS

The administration of these special anchorages is exercised by the Commander, Navy Region Southwest and Navy Port Operations. These anchorages are reserved exclusively for the anchorage of vessels of the United States Government and of authorized harbor pilot boats.

No other vessel shall anchor in these areas except by special permission obtained in advance from the Commander, Navy Region Southwest and Port Operations. For information contact: *U.S. Navy Port Operations (619) 556-1433***.**

The U.S. government vessel anchorage locations are as follows:

1. U.S. Government Vessel Anchorage Area 1 is located approximately 100 yards due west of the channel and west of a line extending approximately 351° 30' from Ballast Point Light. Depths vary between 34 and 67 feet.

   The waters bounded by a line connecting the following points:

Latitude	***Longitude***
32° 42'13.2"N	117° 14'11.0"W
32° 41'12.0"N	117° 14'00.3"W

   and thence along the shoreline to the point of beginning.

2. U.S Government Vessel Anchorage Area 2 encompasses anchorage berths Nos. 212, 213, 214, 215, and 216, located due south of Harbor Island and printed on Chart No. 18773 (San Diego Bay).

The waters are bounded by a line connecting the following points:

Latitude	***Longitude***
32° 43'25.6"N	117° 12'46.1"W
32° 43'25.3"N	117° 12'52.0"W
32° 43'08.2"N	117° 12'58.0"W
32° 42'57.9"N	117° 12'54.0"W

and thence easterly along the northern boundary of the channel to:

Latitude	***Longitude***
32° 43'05.0"N	117° 11'30.5"W
32° 43'27.2"N	117° 11'14.0"W

and thence along the shoreline of Harbor Island to the point of beginning.

"B" STREET MERCHANT VESSEL ANCHORAGE

The B Street merchant vessel anchorage area is located due west from the southwest corner of the "B" Street pier-head and abuts the special anchorage for U.S. Government vessels located off Harbor Island. A segment of the anchorage is within 100 yards of the channel boundary. Depths vary between 19 and 40 feet.

This area is reserved for the use of merchant vessels calling at the Port of San Diego while awaiting a berth. The administration of this anchorage is exercised by the Executive Director, Unified Port of San Diego. For information contact: *Port of San Diego, Marine Operations (619) 686-6345.*

The B Street anchorage locations are as follows:

The waters bounded by a line connecting the following points:

Latitude	***Longitude***
32° 43'00.8"N	117° 10'36.3"W
32° 43'00.8"N	117° 11'23.0"W
32° 43'05.0"N	117° 11'30.5"W
32° 43'27.2"N	117° 11'14.0"W
32° 43'20.2"N	117° 10'53.0"W

and thence due east to the shoreline, and thence along the shoreline and pier to the point of beginning.

ANCHORAGES FOR GENERAL USE

Anchorages for general use include all navigable waters of the harbor except: Designated Channels, cable and pipeline areas, Special Anchorages (above), Naval Security Zones, Restricted Areas (see 33 CFR 334), the U.S. Coast Guard Safety Zone, Unified Port District (UPD) Regulated Areas and South San Diego Bay (southward of a line drawn between the

mouth of Sweetwater Channel and a point on the southerly shore of Crown Cove on the Silver Strand).

Additionally, anchoring northerly of South San Diego Bay is generally prohibited except for vessels engaged in fishing during daylight hours and permitted vessels in UPD regulated anchorages. Authorization to anchor in North or Central San Diego Bay outside designated anchorage areas, for limited periods of not more than 72 hours, may be obtained by application to the Chief of Police, Harbor Police Department. Vessels anchoring in the portions of the harbor other than the areas accepted above, shall leave a free passage for other craft and shall not obstruct the approaches to wharves in the harbor.

For more information contact: *Port of San Diego, Marine Operations (619) 686-6345.*

SMALL CRAFT MOORING AND ANCHORAGE AREAS

The small craft mooring and anchorage areas are comprised of areas established for longer term anchoring and mooring of noncommercial, recreational vessels. For more information, contact: *San Diego Harbor Police: (619) 686-6570 or (619) 686-6272* or www.sdhp.com**.**

The general locations of these small craft anchorages are away from main ship channel areas and are identified below.

Anchorage Designation	Location
A-1	La Playa Cove, Shelter Island Yacht Basin
A-1a, A-1b, A-1c	Shelter Island Roadstead, bayward of Shelter Island
A-2	Shelter Island Commercial Basin
A-3	Laurel Street Roadstead, due east of the Coast Guard Sector
A-4	Bay Bridge Roadstead, northeast of western terminus of the San Diego Coronado Bay Bridge
A-5	Glorietta Bay
A-6	Naval Amphibious Base
A-7	The California Department of Parks and Recreation has not pursued development of an anchorage at A-7 and it appears it may not be done. Boaters may, however, anchor parallel to the beach between Fiddler's Cove and Crown Cove. Anchorage in this area is limited to 72 hours a month and requires a permit from the Harbor Police.
A-8	Sweetwater Anchorage, west of 24th Street Marine

Anchorage Designation	Location
	Terminal, defined by lighted Buoys A,B,C and D and Buoys E and F. **(This anchorage is closed as of October 31, 2008)**
A-9	The A-9 anchorage, southwest of the Coast Guard Sector, has been approved by the Coastal Commission and adopted in the Port Master Plan. Boundary buoys will be installed in the area upon completion of the remediation project currently in progress in A-9. A-9 is bounded by the following: **Latitude** — **Longitude** 32° 43'35.9"N — 117° 10'02.2"W 32° 43'31.5"N — 117° 11'13.2"W 32° 43'26.9"N — 117° 11'11.2"W 32° 43'25.9"N — 117° 11'07.7"W 32° 43'34.8"N — 117° 10'03.2"W

ANCHORAGE LIMITATIONS

1. Anchoring depths and anchor swing radii vary between each of the possible anchorage areas within San Diego Bay.

2. The area surrounding the turning basin at the 24th Street Marine Terminal has numerous wrecks and obstacles that may impair tug escort ability to maneuver.

3. At times anchored and/or moored vessels break loose and drift into the navigational channel and other areas.

V. COMMUNICATIONS

RADIO COMMUNICATIONS

Present coverage of the San Diego Bay area by VHF Marine Radio is considered adequate. There are no radio communication silent areas or blind spots within the harbor area.

U.S. Coast Guard Sector San Diego and San Diego Unified Port District Harbor Police maintain a 24-hour per day listening watch on VHF Channel 16. The services of Port pilots are normally arranged in advance of ship arrivals by ship's agents; however, requests for a pilot can be relayed to the pilots by calling the San Diego Harbor Police on VHF Channel 16.

Ship-to-ship and ship-to-shore communications within the waters of and approaches to San Diego Bay are conducted almost exclusively on VHF marine radio frequencies in the 156-162 MHz band. The level of usage is variable with intermittent time spans of congestion on certain frequencies during periods of high vessel activity among recreational boaters, fishermen, military vessels, and commercial vessels. With the exception of the landmass of Point Loma, extending to heights in excess of 400 feet and bordering the west side of San Diego Bay, the topography surrounding the Bay is low-lying and conducive to the line-of-sight propagation of VHF radio communications.

Currently there is no vessel traffic control system in San Diego Bay. Vessels may enter, depart, or move within the Bay without any prior radio coordination or advance communication of their intentions. Commercial vessels should make “security” calls via VHF 13 and 16 of their intentions while transiting the area to facilitate safe vessel movements. The San Diego Marine Information System (SDMIS) is available at http://www.sdmis.org under the SD Marine Information Link on the Port of San Diego website. The SDMIS website provides an interactive chart, a view of San Diego Bay, maritime information, winds, currents, tides, vessel schedules, and a site map. The site map contains useful links to scheduled yachting events.

U.S. Naval Station San Diego call sign "Control 1" also continues to provide vessel traffic information to commercial vessels. "Control 1" maintains a listening watch from 0600 to 2200 on VHF Channel 12 and has information on most U.S. Navy and Military Sealift Command vessel arrivals, departures, and intra-harbor movements. The Port's pilots normally advise "Control 1" of their in-progress piloting activities on board commercial vessels and receive current naval vessel movement information from "Control 1." The pilots then coordinate directly with other vessel traffic via VHF radio to discuss navigational matters.

Vessels moving in San Diego Bay can expect to encounter U.S. Navy vessels during their transit. The U.S. Navy vessels make extensive use of VHF Channel 12 for ship-to-ship communications, in addition to monitoring Channels 13 and 16. For security reasons, U.S. Navy submarine movements, which are within the main entrance channel and between points outside the Bay to the submarine base near Ballast Point, may occur under radio silence or with abbreviated radio communications with other vessels operating in their vicinity. The U.S. Navy submarines make use of Channel 14 to communicate with assisting tugboats, pilots, and shore units. Certain naval vessel movements are escorted by U.S. Coast Guard vessels, so communications may be established with the escort vessels. This is especially important to be advised of any distance requirements under temporary security zones used to protect the naval vessel.

The U.S. Coast Guard San Diego Sector and San Diego Unified Port District Harbor Police maintain a 24-hour per day listening watch on VHF Channel 16. The services of Port pilots are normally arranged in advance of ship arrivals by ship's agents; however, requests for a pilot can be relayed to the pilots by calling the San Diego Harbor Police on VHF Channel 16.

Current Usage, VHF Marine Radio Channels

The following table outlines the authorized and prevailing usage of VHF Marine Radio Channels within San Diego Bay and identifies the channels normally monitored by certain radio equipped vessels/users that frequent San Diego Bay.

CHANNEL	AUTHORIZED USE	CUSTOMARY USERS
16	Distress, Safety, and Calling	All VHF-Equipped Vessels
09	Calling	Commercial and Non-Commercial Vessels
06	Intership Safety	
12	Port Operations	High usage by U.S. Navy for ship-to-ship and ship-to-shore communication USN's "Control 1."
13	Navigational, Bridge-to-Bridge	
22	Coast Guard Liaison	
77, 67	Port Operations	Pilots/Tugboats
19a	Commercial	Foss Maritime (Pactow Tugboats)
80	International	Sportfishing Boats
73, 80, 05a	Port Operations, Commercial	Harbor Excursion Vessels
14	Commercial, Port Ops	U.S. Navy Submarines
10	Commercial	Harbor Tug and Barge R.E. State Eng. Crowley Marine Services
73	Port Operations	USN Fleet Training Group Vessels
11	Commercial	Pacific Tugboat Service

CHANNEL	AUTHORIZED USE	CUSTOMARY USERS
7a	Commercial	NASSCO
68, 69, 71, 78	Non-commercial (Ship-to-Ship or Ship-to-Shore)	Working Channels for Recreational Vessels
28, 86	Public Correspondence	San Diego Marine Radio Telephone Operator

CELLULAR PHONES

A growing use of cellular telephone services to support ship-to-shore communications has been noted. In the area of the entrance channel to San Diego Bay and seaward, there appears to be an overlapping of Mexican and U.S. cellular systems. Interference and inability to make calls from cellular phones in this area has been observed.

The cellular communications systems used in the harbor area are considered to be adequate.

COMMUNICATION PROBLEMS

1. **Interference**

   a. Improper and unauthorized use of the VHF Marine Radio channels by certain users has created sporadic interference for authorized users. As an example, transmissions from non-English speaking users have interrupted pilots working with tugs on VHF Channel 77 and 12. Because of language barriers, persons causing interference often cannot readily be advised to stop improper use of a radio channel.

   b. The improper use of VHF Channel 13, the designated channel for the Vessel Bridge-to-Bridge Radiotelephone Act, to transmit other than navigational-related information has been reported. This channel is designated for the exchange of navigational information to facilitate safe passage between certain sizes and types of vessels. Operators on these vessels are required to maintain a listening watch on Channel 13 and, when necessary, transmit and confirm the intentions of their vessel and any other information necessary for the safe navigation of vessels.

   c. Interference from radio transmissions from and to other ports, including Los Angeles/Long Beach, has been reported. Users of VHF channel 05a are urged to use the low power setting while transmitting to help eliminate the carry over problem.

2. **Slow Response or Non-Response to Call-Ups**

   Commercial vessels in San Diego Bay may, on occasion, experience slow response from military vessels when they call-up military vessels on VHF Channel 13 or 16. U.S.

Navy submarines may not acknowledge call-ups. VHF Channel 12 is used as a primary channel for ship-to-ship communication between Navy ships and shore units.

3. **Confusion Caused by Military Parlance**

   Military vessel operators use standard H.O.102 parlance when communicating with commercial vessels. As an example, a military vessel operator may inquire of a commercial vessel "Interrogative your intentions" in lieu of stating, "What are your intentions?" If there is any doubt as to the meaning of a communication, it is necessary to ask for clarification.

VI. VESSEL TRAFFIC PATTERNS

EVALUATION

The San Diego shipping channel consists of a main channel with no branches or stems in its entire length to National City Marine Terminal (also referred to as 24th Street Terminal). There are approximately 9,000 deep draft vessel transits of the Bay per year. There is one major choke point at Ballast Point near the entrance. This is the narrowest point in the channel and just inside is the U.S. Naval Submarine Base. It should be noted that submarines can be getting underway or maneuvering to berth at all hours of the day. In poor visibility conditions submarines can often paint on radar as a small contact due to their inherent construction characteristics of a small conning tower above water with approximately 90% of the remainder of the vessel submerged.

Bayward of the U.S. Submarine Base, on the port hand, is the Naval Fuel Pier where contract tankers and, occasionally, naval combatants load and discharge fuel. To starboard in this same stretch is a naval ammunition pier on North Island. At the end of Shelter Island, near the entrance range-markers, is the outlet from the Shelter Island Yacht Harbor. A large measure of the small craft traffic will be found in this vicinity, particularly on weekends. At the other end of Shelter Island is the entrance to America's Cup Harbor (formerly known as Commercial Basin) where the majority of sport fishing boat traffic is berthed.

After an eastward leg, the channel enters a turning basin area before heading toward the center spans of the San Diego/Coronado Bridge. Bordering on this turning basin are the Embarcadero with its Cruise Ship Terminal and the adjacent Navy Pier with the USS MIDWAY aircraft carrier museum ship**.** Across the channel and turning basin area are the Naval aircraft carrier berths on Naval Air Station, North Island.

The next channel leg toward the Coronado Bridge has the Port of San Diego's Tenth Avenue Marine Terminal on the port hand. Between this section and on through the bridge, commercial shipyards give way to the U. S. Naval Station; all of these activities on the port hand. The channel then narrows, then proceeds to the Port of San Diego's National City Marine Terminal.

It should be noted that the San Diego/Coronado Bridge has a vertical clearance of 195 feet over the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

COMMERCIAL VESSELS

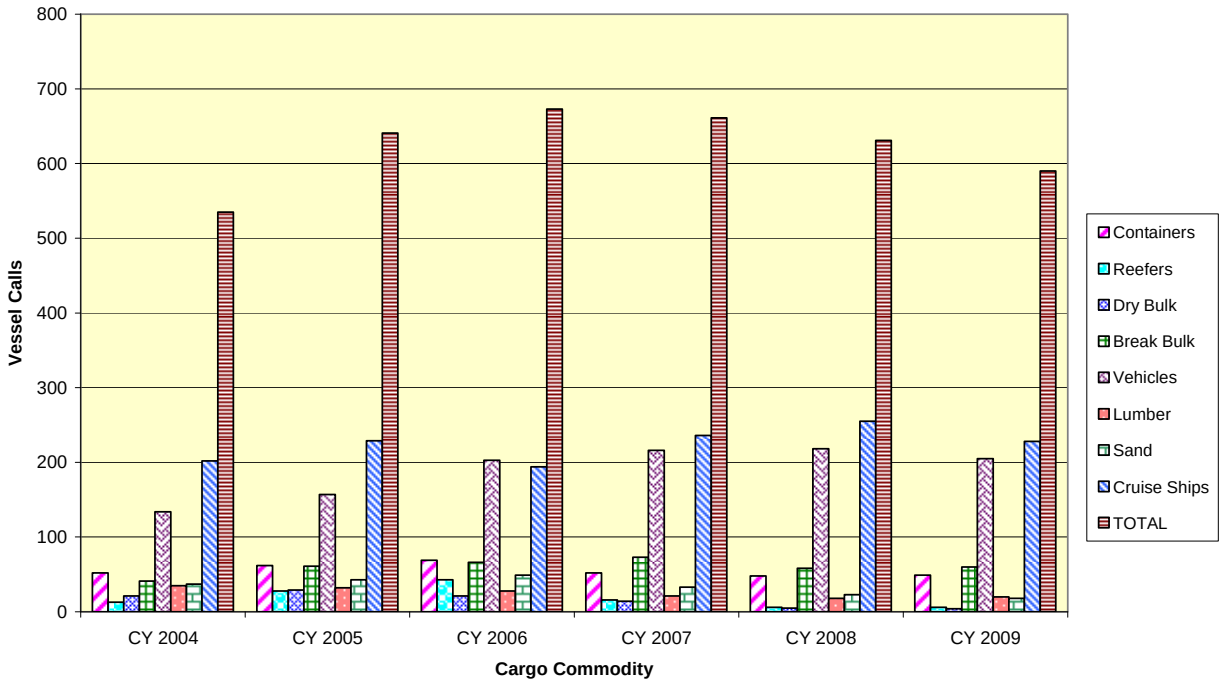
On average, there are three to four large commercial vessels (container ships, bulk freighters, break-bulk freighters, roll on/roll off (RO-RO) automobile carrier vessels, or cruise ships) in the port at any one time. RO-ROs call on the Port's National City Marine Terminal (NCMT) at a frequency of four to five vessels per week. Various bulk and break-bulk freighters call at the port's Tenth Avenue Marine Terminal (TAMT), at a frequency of three to five vessels per week. Barges transporting sand and aggregate materials operate on a weekly basis between TAMT and the Port of Ensenada, Baja California. A number of locally-based work barges also transit the waterway in support of a variety of maritime-industrial business activities. Cruise ships make

regular calls at the Port's B Street Pier Cruise Ship Terminal and are projected to make 220 calls during 2009.

A commercial fishing fleet, consisting mainly of sportfishing vessels, operates out of the America's Cup Harbor Basin at Shelter Island and the port's commercial fishing berthing facility at the G Street Mole.

The Port of San Diego's commercial vessel traffic has continued to grow as the Port continues to develop its marine terminal facilities. Figure 3 shows that the Port's commercial cargo and cruise ship activity have increased at a rate of approximately 5% annually over the past 5 years. A total of 750 voyages by deep draft commercial cargo vessels and cruise ships, representing 1500 transits in and out of San Diego Bay, occur annually.

Figure 3: Port of San Diego Vessel Port Calls, 2004-2009

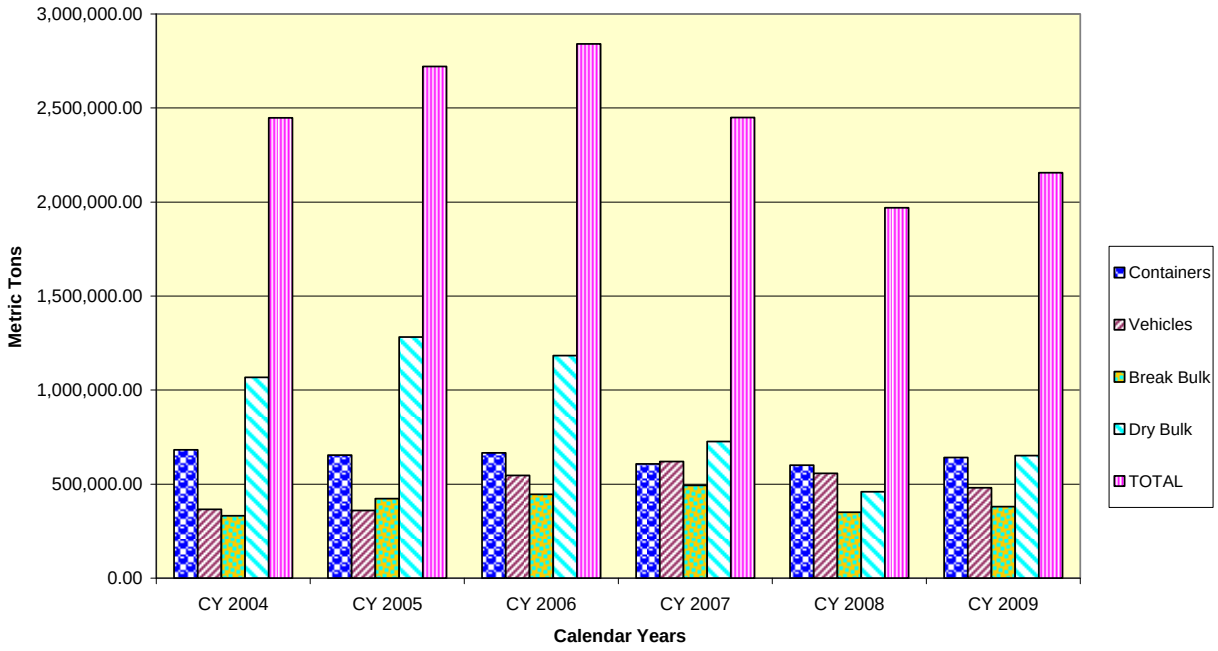


Source: Port of San Diego, 2009, Appendix D & E, San Diego Harbor Safety Plan
Note: 2009 Figures are forecast figures CY= Calendar Year

Almost 2,200,000 metric tons of cargoes were handled through the Port facilities in 2008. Figure 4 shows the distribution of cargo tonnage by type of ship.

Appendix D and E has additional data and charts about the Port's vessel calls, cargo volumes fuel barge calls, and fuel barge volumes for the calendar years 2004-2009.

Figure 4: Port of San Diego Vessel Port Calls, 2004-2009



Source: Port of San Diego, 2009, Appendix D & E, San Diego Harbor Safety Plan
Note: 2009 Figures are forecast figures CY= Calendar Year

In 2008 a new facility to accommodate mega yachts up to 400 feet in length opened along the Port's North Embarcadero area in downtown San Diego. Construction of a new cruise ship terminal at the Broadway Pier is expected to commence in the second quarter of 2009 with completion scheduled for late 2010 or early 2011. The new terminal is expected to attract new cruise business to San Diego and provide a viable third berth for cruise vessels.

The Port of San Diego is also designated as a Strategic Port to support the deployment of the United State's Armed Forces' military cargoes in support of national defense. Both the Tenth Avenue Marine Terminal and the National City Marine terminal are used for military cargo operations. Special security zones are in effect during such operations.

MILITARY VESSELS

Military vessels make up the bulk of large vessel traffic in San Diego harbor and frequently transit the waterway in route to berths at Naval Base Point Loma, Naval Base San Diego, and Naval Base Coronado (including the Naval Amphibious Base adjacent to Glorietta Bay). Naval

vessels of all classes, from 50' long amphibious landing craft to 1115' long aircraft carriers, can be found in the harbor. Landing craft and smaller vessels usually moor at the amphibious base in Glorietta Bay. Aircraft carriers moor at wharfs at Naval Base Coronado, submarines moor at Naval Base Point Loma, yet the bulk of the fleet moors at the Naval Base San Diego. Occasionally, U.S. Naval and U.S. Coast Guard vessels moor downtown at either Broadway or B-Street Pier which belong to the Port of San Diego.

The Coast Guard has two main bases in San Diego Bay. The Ballast Point Moorings at Naval Base Point Loma are home to the 110' Patrol Boat, Coast Guard Cutter (CGC) EDISTO and the 87' Patrol Boat, CGC SEA OTTER. The Sector San Diego Moorings adjacent to Harbor Drive are homeport to the 87' Patrol Boats CGC HADDOCK and CGC PETREL, as well as two 41' Utility Boats and three 33' Special Purpose Craft-Law Enforcement boats. San Diego is also the homeport for two 378' High Endurance Cutters, CGC CHASE and CGC HAMILTON, which are moored at Naval Base San Diego. The 175' Buoy Tender USCG Cutter GEORGE COBB, home ported in San Pedro, CA, is responsible for servicing all of the primary Aides to Navigation in San Diego Bay. Various classes of cutters frequent San Diego for training purposes and usually moor at the Naval Pier Downtown or at Naval Base San Diego. Two other Coast Guard units based in San Diego are the Maritime Safety and Security Team 91109 and the Pacific Tactical Law Enforcement Team, located at Marine Corps Recruit Depot San Diego.

The U.S. Navy houses their Afloat Training Group (ATG) at the Naval Base San Diego. ATG trains and tests all U.S. Military and U.S. Coast Guard ships larger than 110' feet in length. Training is conducted while the vessel is underway, at anchor, or moored. The testing vessels normally anchor south of Harbor Island. Underway drills are conducted outside of San Diego Bay. Drills and training that can be conducted pier-side are conducted at one of the three metro San Diego bases.

RECREATIONAL BOATING

Recreational boaters for the San Diego/Mission Bay area have been numbered at 200,000. Marinas inside San Diego harbor are located at Shelter Island, Harbor Island, Marriott Hotel, Chula Vista Harbor, Coronado Cays, Glorietta Bay, and Sweetwater Channel.

Considering the vicinity of the marinas to the main shipping channel, recreational boaters present a hazard to navigation to larger commercial traffic restricted in their maneuverability. There have been numerous complaints from both the Navy and the San Diego Pilots about Inland Navigational Rule 9 violations in which recreational boaters impede the safe passage of larger vessels confined to a narrow channel. The HSC has recommended and implemented boater education materials to improve boater safety. These are discussed in more detail on the following page under “Boater Education.”

SUMMARY OF VESSEL TRAFFIC AND CARGO

As shown in Figure 3 (see above) commercial vessel traffic in San Diego Bay has shown a slight decrease since the end of Calendar Year 2006. This is due to ongoing economic conditions which should improve beginning in Calendar Year 2010. Figure 5 provides a summary of the average annual commercial and military vessel traffic for the Port of San Diego. The specific reports on Port of San Diego vessel arrivals and cargo volumes by classification can be found in the Appendix D and E.

Figure 5: Port of San Diego Average Annual Vessel Traffic

VESSEL TYPE	VESSEL MOVEMENTS (Inbound and Outbound)		
	Subtotal by Vessel Type		Total
	Cargo	Others	
Total Annual Movements for All Vessel Types			**82,413**
Deep Draft Commercial Vessel (Cargo plus Cruise)			1,175
Cargo Ships (largest vessel: 1,000' length,106' beam, 41'draft)		740	
Bulk	20		
Container Ships	100		
General Cargo	180		
Roll On/Roll Off	440		
Cruise Ships (largest vessel: 1,000' length, 106' beam, 34' draft)		435	
Excursion Ships (largest vessel: 222' length, 57' beam, 6' draft)		68,000	68,000
Commercial Sportfishing (average vessel size: 123' length, 32' berth, 13' draft)		10,094	10,094
Military (largest vessel: 1,115' length, 252'beam (flight deck), 39' draft)		3,144	3,144

Note: Tug traffic was not included in the above statistics since inner harbor tug movements alone exceed 7,000 for a typical year.
Note: Detailed statistics for Port of San Diego Arrivals and Departures are in Appendix D and E.

Several types of cargo frequent the Port of San Diego. Cargos include containers, lumber, bulk cement, sand and fertilizer, fresh and frozen foodstuffs, automobiles, steel, project cargos and fuel oil. The most common large vessels in the harbor are cruise/passenger ships and naval vessels.

The oil and fuel that move through the Bay are the result of naval operations and cruise ship activities where oil and fuel may transit the harbor several times per week according to the level of vessel activity. The majority of petroleum products transported in San Diego Harbor are JP-5, DFM, IFO 380 and MGO. The main import destinations are the Naval Fuel Depot, La Playa and the Bunker Fuel Facility at TAMT. These oils are then transferred to various military vessels as cargo and/or service oil. These vessels operate in and out of the harbor on regular local training exercises and other operations. Fuels for cruise vessels are stored at TAMT until transferred by

barge to the B Street Cruise Ship Terminal whenever required. U.S. Navy ship, foreign ship, service craft, and tug movements are summarized in Appendix F. Navy Fuel Depot totals are summarized in Appendix G.

LIMITED ACCESS AREAS

Recreational boaters need to be aware of the following limited access areas in San Diego Bay. All of these areas are noted on Chart 18773 and should be referenced per the appropriate references, including U.S. Coast Pilot 7 (41st Edition, 2009).

U.S. Navy Security Zones, Restricted Areas, and Naval Vessel Protection Zones

The Navy has installed Physical Protection Barriers to protect its assets at Naval Bases San Diego, Coronado and Point Loma. Security Zones are in place at Naval Station San Diego, Naval Station Pt. Loma, Naval Station Coronado and other noted areas on North Island as per Chart 18773. No persons or vessels may enter these Security Zones. Additionally, nothing may be placed in or taken from these areas. Temporary Restricted Areas are in place when loading and unloading ammunition.

The Coast Guard has also established regulations for the safety or security of U.S. naval vessels in the navigable waters of the United States. Under 33 CFR §165.2030, Naval Vessel Protection Zones are permanently established around naval vessels while they are within United States territorial waters. Each zone surrounds the naval vessel with a 500 yard radius, whether the naval vessel is underway, anchored, or moored (except when the naval vessel is moored within a restricted area or within a naval defensive sea area). This includes any vessel owned, operated, chartered, or leased by the U.S. Navy or under the operational control of the U.S. Navy. The Navigation Rules shall apply at all times within a naval vessel protection zone. Within a naval vessel protection zone, starting at 500 yards, all vessels shall operate at the minimum speed necessary to maintain a safe course and shall proceed as directed by the official patrol. At 100 yards, no vessel or person is allowed to approach the naval vessel without authorization from the official patrol. Vessels requesting to pass within 100 yards of a U.S. naval vessel shall contact the official patrol on VHF-FM ch.16. When conditions permit, the official patrol may: (1) permit vessels constrained by their navigational draft or restricted in their ability to maneuver to pass within 100 yards of a U.S. naval vessel in order to ensure a safe passage in accordance with the Navigation Rules; and (2) permit commercial vessels anchored in a designated anchorage area to remain at anchor within 100 yards of passing naval vessels. Violations of these regulations are punishable as a felony,

Restricted Areas at the Amphibious Docks of Naval Station Coronado, Pt. Loma Bait Barge, and Ballast Point

Access to Restricted Areas is limited to non-stop passage for the security of government property and/or to provide protection to the public from risks of damage.

Regulated Navigation Area (RNA) at the Arco Terminal Dry-Dock at U.S. Naval Sub Base Pt. Loma

During submarine docking/undocking operations, mariners transiting within the RNA shall proceed at a speed that generates no wake from their vessel. A Broadcast Notice to Mariners will be issued to inform the maritime community of the dates and times of the docking/undocking operations.

Security Zones around Cruise Ships within San Diego Bay

For the protection of cruise ships calling on San Diego the following stipulations are in place as per 33 CFR §165.1108:

> *All waters, extending from the surface to the sea floor, within a 100 yard radius around any cruise ship that is anchored at a designated anchorage within the San Diego port area inside the sea buoys bounding the port of San Diego. The shore area and all waters, extending from the surface to the sea floor, within a 100 yard radius around any cruise ship that is moored at any berth within the San Diego port area inside the sea buoys bounding the Port of San Diego; and all waters, extending from the surface to the sea floor, within a 100 yard radius around any cruise ship that is underway on the waters inside the sea buoys bounding the Port of San Diego. In accordance with the general regulation in [33 CFR] Sec. 165.33 of the part, entry into or remaining in these zones is prohibited unless authorized by the Coast Guard Captain of the Port, San Diego or his designated representative.*

Persons desiring to transit the area of the security zones may contact the Captain of the Port at telephone number (619) 278-7031 or on VHF-FM channel 16 (156.8 MHz) to seek permission to transit the area. If permission is granted, all persons and vessels must comply with the instructions of the Captain of the Port or his or her designated representative.

Security Zone around Coronado Bay Bridge

There is a security zone around all pilings and other infrastructure of the Coronado Bay Bridge. 33 CFR §165.1110 requires mariners to stay at least 25 yards away. Permission to enter the security zone near the pilings, for example to conduct environmental surveys, may be requested through the Captain of the Port's office (call 619 278 7262). This permission must be requested in advance; it will not be granted on-the-spot.

Regulated Navigation Area for all of San Diego Bay

A Regulated Navigation Area (RNA) is in place for all of San Diego Bay, Mission Bay and their Approaches. All vessels 100 gross tons or greater (including tug and barge combinations when combined weight is 100 gross tons or greater) must obtain permission from the Coast Guard Sector when entering, moving within, or departing the RNA. It is recommended that mariners request permission to transit by calling (619) 278-7033 or by hailing Coast Guard Sector San Diego via VHF-FM marine band radio on channel 16 (156.800 MHz) at least 30 minutes prior to transit to avoid delays. (Public vessels and vessels operating properly installed, operational, type approved Automated Information System (AIS) as denoted in 33 CFR §164.46 are

exempted from making requests as required in this regulation). This regulation is found in 33 CFR §165.1122.

Safety Zone at the U.S. Coast Guard Base

Vessels may transit the area of this safety zone without permission, but may not anchor, stop, remain within the zone, or approach within 100 yards (92 meters) of the land area of Coast Guard Sector San Diego or structures attached thereto. Note that Temporary Safety Zones may be established for marine events and other on-water operations for safety and environmental purposes. Military operations and national security events may necessitate the establishment of Temporary Security Zones. No person may enter a safety zone or security zone unless authorized by the Captain of the Port. These specific zones will be published in the Local Notice to Mariners (and/or broadcast on VHF-FM Ch. 16).

SPECIAL LOCAL REGULATIONS / MARINE EVENTS

Annual marine events are listed in 33 CFR §100.1101. These are routine events that have been approved and described in the regulations, including safety zones and other navigation safety requirements. For information about marine events in the San Diego area, please call 619-278-7262.

SMALL VESSEL TRAFFIC EFFECTS ON SAFETY

As host of past America's Cup yacht races, San Diego Bay established itself as a sailing and yachting center in California. The presence of a large kelp bed and excellent ocean fishing supports a large fleet of dive, whale watching, bottom and surf fishing vessels in San Diego Bay. These vessels use the same navigation channel as the larger vessels when entering and exiting the Bay. In addition to ocean going small vessel traffic, there is significant traffic within the Bay. The vast majority of small vessel recreational traffic is encountered on the weekends in San Diego Bay. During the summer months, on Wednesday evenings, there is a large (and largely informal) gathering of sailboats for a race known locally as the "Beer Can Regatta". This race can virtually cover the entrance area with sailboats from about 17:00-20:00 hours, local time.

Existing conflicts and potential problems associated with the interface between small recreational and fishing vessels, and larger commercial and military vessels were discussed at length by the Harbor Safety Committee (HSC). Although there is ongoing communication between recreational boaters and commercial/Navy interests in San Diego Bay, the Committee recognized the need for continuing efforts to expand and improve this dialogue and to enhance this relationship in order to ensure the safety of both small boats and shipping. In this light, the HSC has explored, in depth, with representatives of recreational boaters, commercial interests, San Diego Bay Pilots, U.S. Coast Guard, and the U.S. Navy, means to address these areas of conflict. The HSC found the following to be primary sources of existing difficulty during navigation in the Bay.

Small Vessel Traffic Hazards

1. Failure of recreational boaters to recognize the limitations of the large vessels regarding maneuverability and depth restrictions that confine their safe navigation to the main ship channel.

2. Failure of some recreational boaters to know or respect the Rules of the Road and Rule 9 (Steering and Sailing Rules-Narrow Channels).

3. Some members of the boating public operating boats in an unsafe manner.

4. Sailboats (racing and otherwise) interfering in the passage of larger vessels and unwittingly getting into the wind shadow of the larger vessel which causes the sailboats to lose maneuverability.

5. Races (with or without permits) with courses that cross the navigation channel during use by a larger vessel.

6. Recreational fishermen fishing in the channel and anchoring near the channel markers.

7. Failure of some recreational boaters to monitor and use proper channel for radio communication. It's each boater's responsibility to use proper radio practices, protocol, and language.

8. Failure of recreational boaters to recognize the boundaries of the main channel.

BOATER EDUCATION

The Chair of the Harbor Safety Committee appointed an Education Subcommittee to evaluate and implement recommendations (see Chapter XIII) concerning the need for establishing and/or upgrading existing educational or public awareness programs for all waterway users. A focus of the HSC's efforts has been on the interaction of small vessels and ships. The HSC has published the following educational materials to improve recreational boating safety: (1) "Rule 9" poster (posted at the marina and boat launches; and (2) "*A Guide to Boater Safety, San Diego Bay*" (distributed to marinas, the Port of San Diego, and tackle shops). Copies are provided in Appendix C.

ACCIDENTS AND NEAR ACCIDENTS

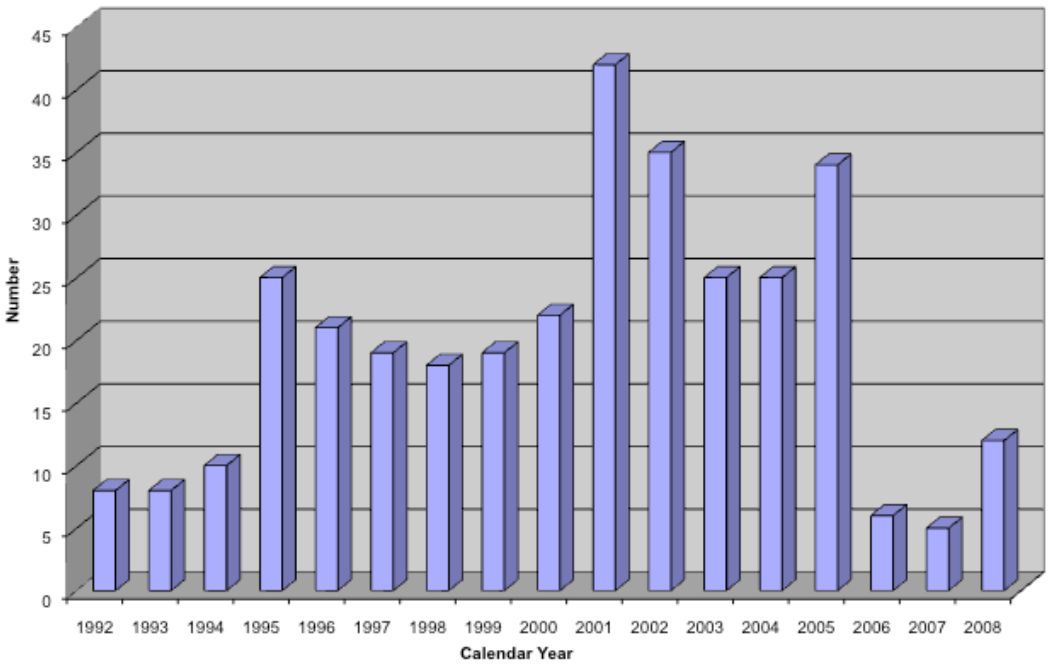
Accidents and Pollution Incidents

There are strict reporting requirements for casualties and potential casualties already in place (46 CFR §§4.03 and 4.04). Any violations of the Inland-International Navigation Rules that result in a near collision, grounding, or other hazard to the Port must be reported to the Coast Guard Sector San Diego at (619) 278-7033 for investigation, potential penalty and the capturing of lessons learned.

The most recent condensed USCG reports for marine casualties, spills and incidents are in Appendix H and I. The charts below (taken from Appendix H and I) show the number of accidents and pollution incidents in San Diego Bay from 1992-2007.

Figure 6 below shows that the number of collisions, allisions and groundings have significantly decreased since 2001.

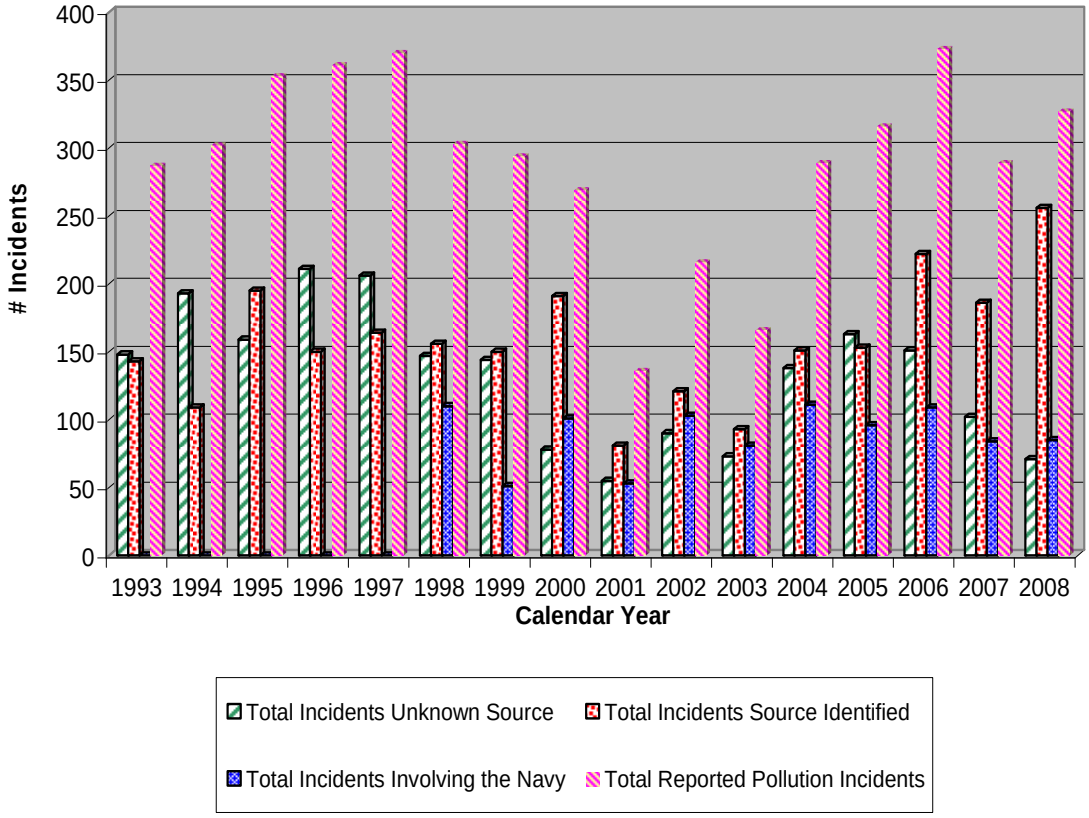
Figure 6: Collisions, Allisions, and Groundings in San Diego Bay 1992-2008



Source: USCG Sector San Diego, Investigations Division, 2009

Figure 7 shows a decrease in spill incidents since 2006. However, the number of reported pollution incidents appears to have increased between 2001 and 2006. Two factors should be taken into consideration when interpreting this increase. First, increased enforcement and second, education outreach for reporting of all size spills has significantly improved, thus there could have been more spills in the past that were not reported. It is also worth noting that the total spill data for 2008 is substantially affected by the large Navy spills for that year.

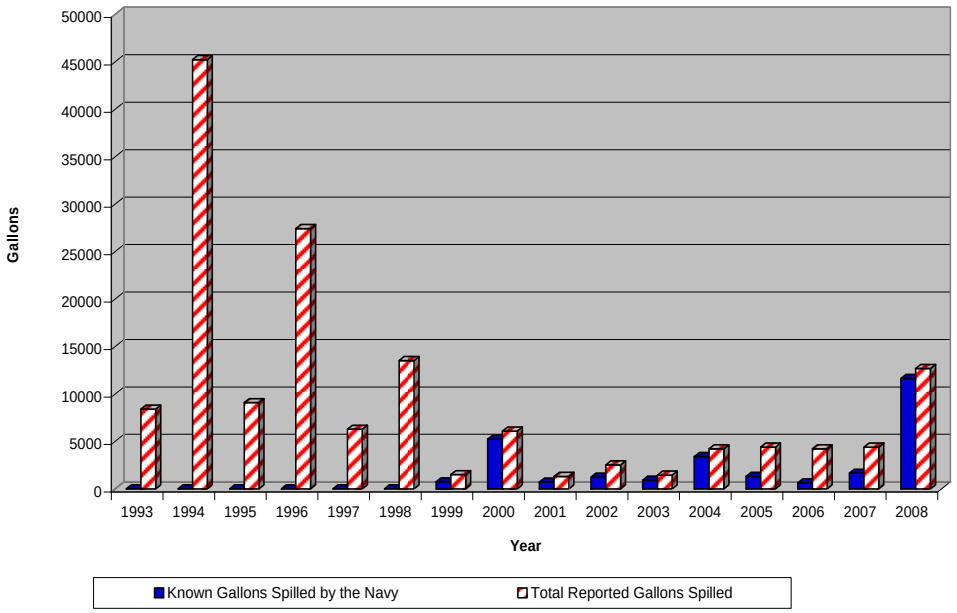
Figure 7: Oil and Hazardous Substance Incidents in San Diego Bay 1993-2008



Note: (1) The Navy spill data is for 1999-2008 only, no data available for 1993-1998.
Source: USCG Sector San Diego, Investigations Division, 2009

Figure 8 shows that the volume of oil and hazardous substance spills has significantly decreased since 1993. It is worth noting that the total spill data for 2008 is significantly affected by the Navy spill that was the largest spill volume in 2008.

Figure 8: Gallons of Oil and Hazardous Substance Spilled in San Diego Bay 1993-2008



Note: (1) The Navy spill data is for 1999-2008 only, no data available for 1993-1998. Source: USCG Sector San Diego, Invesigations Division, 2009

Near Accidents

There are no clear guidelines for reporting near accidents if they do not result from violations of the Rules of the Road. That they do occur is, of course, a given. Anecdotal evidence supports that there have been many close calls.

Representatives of California's five Harbor Safety Committees and the U.S. Coast Guard met in an attempt to reach agreement on a uniform definition of "near miss" incidents. All five Harbor Safety Committees (San Diego, Los Angeles/Long Beach, Port Hueneme, San Francisco, and Humboldt) have now agreed to the following definition:

> *A reportable 'Near Miss' is an incident in which a pilot, master or other person in charge of navigating a vessel, successfully takes action of a 'non-routine nature' to avoid collision with another vessel, structure, or aid to navigation, or grounding of the vessel, or damage to the environment.*

The next step is to identify, collect and correlate statistical data on near misses in a consistent manner within California, and to encourage the timely reporting of such incidents so that, by

analysis, improvement to the safe management of vessel movements in the State's waterways may be recommended and implemented.

The SD HSC fully supports and will continue to participate in the joint state-wide endeavor of all five Harbor Safety Committees and the U.S. Coast Guard to develop a standardized system for reporting and recording data on "near misses."

EMERGENCY ROUTING PROCEDURES

The U.S. Coast Guard has the legal authority to restrict movement for special contingency and has procedures for security and safety zones. Alternate routing of vessels is determined on a case-by-case basis by the Captain of the Port. This is determined to be adequate by the SD HSC.

FEDERAL, STATE, AND LOCAL LAWS

During their deliberations the SD HSC reviewed the various jurisdictional issues and laws governing vessel movement in San Diego Bay. Current recommendations are listed in Chapter XIII regarding the support by the HSC to change various federal, state, and local laws. Most of these recommendations apply to navigation on the federal and state level, and mooring ordinances on the local level.

A compendium of California statutes and regulations relating to oil spill prevention and response can be found online at the California Office of Oil Spill Prevention and Response Website at http://www.dfg.ca.gov/ospr/law/index.html under the “laws and regs” link. Chapter XV provides further discussion of regulations and guidelines of particular importance to San Diego boaters.

VII. TUG ASSIST/ESCORT

The SD HSC submitted recommendations to the California Office of Spill Prevention and Response for the promulgation of Tug Escort regulations for San Diego Bay. A copy of the 2005 Tug Escort Regulations (14 CCR §§852 - 852.6) is contained in the Appendix B. The most recent update of the Tug Escort regulations (14 CCR §§852 - 852.6) can be found on the California Office of Spill Prevention and Response website, under the "laws and regs" link at *http://www.dfg.ca.gov/ospr/law/regs.html*.

EVALUATION

The area with a need for tug escort for petroleum product transportation embraces over 12.8 nautical miles of navigable waters and reaches from the San Diego Entrance Buoy to National City Marine Terminal. The majority of petroleum products transported in San Diego Harbor are JP-5 and DFM. The main import destination is the Naval Fuel Depot, La Playa. These oils are then transferred to various military vessels as cargo and/or service oil. These vessels operate in and out of the harbor on regular local training exercises and other operations.

Development of a practical, effective and economical plan to increase the safe transit and spill prevention of petroleum products upon the waters and coast line of the San Diego Harbor area required a comprehensive analysis. Considerations of the ecology, shoreline developments, industries, economics, present technology, available equipment, local operations, and weather and sea conditions are among the matters considered.

The present commercial procedure for inbound laden tank vessels is for the assisting tug(s) to meet the vessel at Buoys 5/6 or as otherwise directed. Tugs assisting outbound laden tank vessels are generally released after the ship has cleared Buoys 5/6.

When and how the tug(s) are made fast to both inbound and outbound vessels and when tugs are released are factors determined by the Pilot and/or Master. These decisions depend on terminal location, vessel size, other vessel traffic, weather, currents and other varying factors.

TUG EQUIPMENT

A minimum of five commercial ship assist tugs and five Navy assist tugs are assigned to San Diego Harbor. The commercial tugs have bollard pull ranges from 23 tons to 34 tons, and the Navy tugs have bollard pull ranges of 34 tons to 55 tons. All of these tugs are outfitted with an operable bow winch fitted with wire(s) and all tugs are fendered for ship assist. The Escort Tug Inventory (Fig. 8) provides a detailed description of the tugs in the San Diego Harbor.

Five commercial escort tugs are regularly operated on San Diego Bay. The configurations of these tugs are primarily conventional twin screw tugs and range from 2000 hp to 3500 hp. These tugs perform both ocean and harbor service and are occasionally rotated between other ports.

Four 2400 hp zt-drive (propeller forward) tractor tugs and one 4400 hp Z-drive tug are berthed at the Naval Station San Diego. These tugs are dedicated to naval operations except in emergency situations. All are fendered for ship and submarine assist.

It is the opinion of the SD HSC that the tugs available in San Diego Harbor provide a sufficient selection of sizes, shapes and power so that, including all the committee recommendations, any tanker using the port can be safely handled.

Figure 9: **2008 Escort Tug Inventory - San Diego Bay**

	CERTIFIED TUGS		Adv. Hp:	Bollard Pull	Year Built	Length	Beam	Draft	GT	Tow Wire	Fendered
COMMERCIAL USE TUGS											
	FOSS MARITIME COMPANY										
1	Pacific Queen	*tf	2000	24.6	1980	76	26.5	11.5	106	1	Yes
2	Pacific Knight	*tf	2000	26.1	1980	76	26.5	11.5	94	1	Yes
3	Pacific Viking	T	2400	23.1	1978	96	26	13	94	2	Yes
	CROWLEY MARINE SERVICES										
4	Saturn	T	3500	31.4	1969	91	29	13.3	147	1	Yes
5	Spartan	T	3500	34	1969	91	29	13.3	147	1	Yes
NAVY/U.S. GOVERNMENT SPECIAL SERVICE CONTRACT											
	EDISON CHOUEST OFFSHORE										
1	C-Tractor-7***	zt	2400	34	1994	90	34	18	147	0	Yes
2	C-Tractor-8***	zt	2400	34	1994	90	34	18	147	0	Yes
3	C-Tractor-9***	zt	2400	34	1994	90	34	18	147	0	Yes
4	C-Tractor-10***	zt	2400	34	1994	90	34	18	147	0	Yes
5	C-Tractor-14***	Z	4400	55	1999	102	36	18	198	0	Yes

LEGEND:
** - kort nozzled* *s -single screw*
f:-flanking rudders *zt - azimuthing propellers, tractor(propellers forward)*
t- twin screw *z - azimuthing propellers(Z-drive)*

Source: U.S. Navy, Foss Maritime Company, and Crowley Marine Service, 2009

STEERING AND STOPPING EFFECTIVENESS OF TUGS

A tug's effectiveness in steering and controlling an assisted vessel is affected by a number of variables. Factors such as, but not limited to, the ship's size, tonnage, draft, handling characteristics and speed, conditions of currents, available water, wind, width of berth, and the tug's maneuverability, rudder power, and push/pull capabilities are among the variables The majority of escort tasks will be of relatively short durations, projecting that the escorts tug(s) will also serve as the assist tug(s). Both calculated stopping power needs and local knowledge on assist effectiveness of existing equipment is major considerations in recommending the number and total power of escort tugs.

Traditionally the push/pull capability of tugs has been measured by the engine manufacturers indicated horsepower and bollard testing.

TUG MANNING

The current manning level practices in San Diego for escort tugs is dependent on tug size, power, deck equipment, job function, and contractual requirements or other policies. All personnel meet or exceed federal licensing or certification requirements.

The HSC finds that the current manning levels for harbor operations are sufficient to perform the necessary work involved with escort services. In any event, no tug should engage in escort services with less than a crew of three.

VIII. VESSEL TRAFFIC SERVICE

San Diego Bay does not have a Vessel Traffic Service (VTS), but does have a system of communication between the U.S. Navy and the Pilots of the San Diego Bay Pilots Association whereby each commercial pilot has an individual cell phone and can be called directly from the Navy "Control One" to coordinate vessel moves. Vessel movements are announced on marine VHF Channel 12 as occurring by the entity making the move to "Control One" who acts as a clearing house for the information. This arrangement has been adequate. However, with expected increase in traffic, it is advisable that a more sophisticated system be instituted. While the current system of communications and cooperation between the major commercial entities, the San Diego Bay Pilots, and the Navy's "Control One" organization seems adequate, all are in agreement that there is room for improvement.

Known Ship Movements are available from:

San Diego Unified Port District: (619) 686-6345
http://www.portofsandiego.org/maritime.html

Navy Region SW Port Operations: (619) 556-1433

It is the opinion of pilots, commercial entities, and others, that a coordinated communication system would smooth the movement of shipping and eliminate delays. It would allow advance planning of both departure/arrival times and better planning of the actual passing of ships in the channel at the safest and most opportune point. These improvements would significantly reduce the risk of an accident

A web based information and operating system that provides real time marine information to a multitude of San Diego Bay users has been installed. This system is called the San Diego Maritime Information System (SDMIS) and can be found at http:www/sdmis.org under the SD Marine Information Link on the Port of San Diego website. The system includes an electronic chart with point and click information overlays for port services, hazards, security zones, construction projects and marine events; environmental sensors for wind, and current speed and direction; identification of environmentally sensitive areas with detailed management and protection information; digital video camera coverage of select San Diego Bay facilities and waterways; central information hub for San Diego Bay operating requirements, weather, and vessel scheduling; programmed and real time deep draft vessel maneuvering areas; and pre-programming for display and monitoring of AIS/GPS transponder equipped vessels.[3] The OSPR provided grant funds to the District for the installation and operation of the marine information system. The District agreed to administer the grant funds to build the marine information system, retain ownership thereof, and operate the system. The web-based system averages 400 hits per day.

[3] NOTICE OF DISCLAIMER OF LIABILITY: The SDMIS website is intended for information purposes only. The information is intended for use by persons experienced in maritime navigation and vessel maneuvering with the knowledge that there could be errors. Errors in data, chart information, or equipment malfunctions may give incorrect results. All information provided by the SDMIS site is provided AS IS and has no guarantee of or warranty of any kind. All expressed and implied guarantees and warranties are hereby voided. In no event will the San Diego Unified Port District, the United States Coast Guard, or the United States Navy be liable for any damages or injuries as a result of the use or misuse of the SDMIS system and associated products all the information supplied.

IX. BRIDGE MANAGEMENT REQUIREMENTS

There is a single bridge spanning San Diego Bay. The San Diego/Coronado Bridge has 195 feet of vertical clearance over the two middle channel openings with a horizontal clearance of 600 feet. The charts for the Bay show an in-bound lane between piers 18 and 19, and an out-bound lane between piers 19 and 20. It is accepted practice in San Diego Harbor to use the span between 19 and 20 for both directions of traffic, if the channel is clear.

X. COMPETITIVE ASPECTS

The Harbor Safety Committee for the Port of San Diego has determined that the Harbor Safety Plan outlined herein should have a minimal additional economic impact upon the maritime industry, the Port Authority, tenants and users of the Port, and the surrounding community.

Nothing in the San Diego Harbor Safety Plan would put the Port of San Diego at a competitive disadvantage with other ports within the United States. However, as with all long range outlooks, we do suggest the possibility of future unknown fiscal impacts on the Port, the maritime industry, and the local community, based upon needs, requirements, or legislation that are all unknown at this time.

An evaluation of the economic impact of the Plan will be conducted as recommendations are made and implemented. It was the determination of OSPR that the tug escort regulations did not impose a significant economic impact.

XI. PROJECT FUNDING

SAN DIEGO MARINE INFORMATION SYSTEM PROJECT FUNDING

There is no consistent source of funding to allow the San Diego Marine Information System to continue to operate from year to year. Safety of navigation in our California Harbors is highly dependent upon accurate tidal and current information. In the past decade, mariners have been aided by a variety of environmental sensing systems to access real time tide, current and wind information, which provide more accurate information than published tide tables. In San Francisco, Los Angeles and Long Beach harbors a Physical Ocean Real Time System (PORTS) was installed; the Ports of San Diego, Hueneme and Humbolt Bay have differing systems and capabilities. All agreed on the proven value of the systems to our harbors, particularly during storms which buffer our coast. However, the systems do not have uniform capabilities and coverage, installation and maintenance or permanent funding. A PORTS or PORTS type system should have an ongoing appropriation of maintenance and operating funding from federal (i.e., NOAA) and State (i.e., OSPR) funds, and/or Port budgets.

BOATER EDUCATION

A grant was obtained from BOAT/U.S. which funded development and distribution of 250 laminated signs for posting in marinas, four permanent signs for posting at boat launch ramps, 1,000 black and white Rule 9 flyers for distribution by regulators, and production and copying costs for a video to demonstrate the problem of vessel traffic in the navigation channel. In-kind support for the Port District has been volunteered for assistance and general support for the

educational signage regarding Rule 9. The U.S. Coast Guard could be a source for funding for buoyage changes, signage, and marina posting. The U.S. Coast Guard Auxiliary already produces many boating safety materials and could be encouraged to support some of the recommendations herein.

In view of the above advantages accruing to all concerned, it is anticipated that funding could be provided on a shared basis, from all the economic beneficiaries of such a system, while concurrently providing a safer San Diego Bay for all of its users.

XII. ENFORCEMENT

The goal of the SD HSC is to prevent an oil spill in San Diego coastal, harbor, and estuarine waters. The effectiveness of the Harbor Safety Plan hinges on the enforcement of navigational laws and practices and on fostering a cooperative ethic among those who use the Bay. The SD HSC is committed to strong enforcement of speed limits, Rules of the Road, and adherence to Rule 9 as imperative safety of navigation to be improved in San Diego Bay.

The U.S. Coast Guard has primary authority for enforcement of federal requirements in the navigable waters offshore and within San Diego Bay and Mission Bay, with the San Diego Harbor Police enforcing local ordinances and regulations. It has been noted by the SD HSC that Harbor Police personnel must observe a violation to issue a citation. Efforts to support reporting of Rule 9 and other violators were supported through increased coordination and communication between commercial pilots and San Diego Harbor Police. Harbor Police are now issuing citations and distributing Rule 9 flyers.

The Coast Guard Marine Event Permit process includes notification of all agencies that may have an interest in permitted activities. All marine event sponsors must submit an application for a Marine Event Permit to Coast Guard Sector San Diego. The Marine Events staff will determine if an event requires a permit. Applications forms are available by calling (619) 278-7262.

XIII. HARBOR SAFETY COMMITTEE RECOMMENDATIONS AND ACCOMPLISHMENTS

SAFETY AND NAVIGATION RECOMMENDATIONS

1. The San Diego HSC joined with the other California HSCs to support legislation for authorization of a statewide California Physical Oceanographic Real-Time System (CalPORTS) to be established and permanently financed by NOAA and/or the State of California. PORTS is of proven value to the broad public in terms of marine safety, protecting the environment, use by recreational boaters, academia, and preventing oil spills in California waters. Safety of navigation in our harbors is highly dependent upon real time tidal and current information. San Diego Harbor has in place a Marine Information System which provides real time tide and current information. This system should be funded to allow continued operation until a PORTS system is evaluated, installed, and funded for permanent operation. OSPR should continue its oversight role.

2. Dredging of the navigational channel should be accomplished to provide an 800 foot wide channel from sea to Buoy 20. A ship control simulation of channel transit demonstrated a problem in negotiating the channel turn in vicinity of Buoy 17. Widening the channel will ease the turn and provide for increased safety of deep draft ship passages. See 1997 Ship Control Simulation of Channel Transit contained in the archives.

3. Clarify the signage on Zuniga Jetty.

4. When the technology is available, the SD HSC requests that the intensity of aid to navigation lights be increased on the navigational range lights. This would allow mariners to readily distinguish the range lights from background light sources. This is being addressed in a systematic manner as filament bulbs in the Coast Guard's aids to navigation are being replaced with LED lights. In addition to higher intensity, the LED lights last longer, require less maintenance and do not require bulky, acid based batteries. However, this upgrade process will take time due to funding restraints and to ensure that the changes in light characteristics are duly approved and reflected in the proper official references. This LED light upgrade will eventually include the lights on the fixed ranges.

5. The San Diego Unified Port District should continue its program of clearing hazards west of National City Marine Terminal. Tug maneuvering room must be maintained in the area west of the channel and turning basin for safety in docking deep draft ships.

6. Coast Guard should insure that all marine events are properly permitted and monitored.

7. Request that the Harbor Police and USCG be on patrol during peak periods of traffic.

8. Report detected violations of VHF Marine Radio communication procedures to the FCC.

BOATER EDUCATION RECOMMENDATIONS

9. Educate marine VHF radio users about the authorized use of the various radio channels (highlighting channels recreational boaters are not allowed to use), and proper radio power settings to limit transmission carry-over (interference).

10. Emphasize navigational rules, safe operation, and limitations of large vessels.

11. Post signs in marinas, boat launching ramps and frequently used boating areas that warn of the danger of boating near large vessels and remind recreation boaters of the importance of Rule 9. These signs will contain two or three graphics depicting the result of interfering with a large ship and simple text reminding boaters of their obligation to respect Rule 9. Monitoring of the signs is required, as some are subject to weathering.

12. Request that OSPR urge the California Department of Motor Vehicles (DMV) to continue to include Safe Boating flyers with each boat registration, reminding vessel owners of rules of the road and safe boating practices.

13. Request the *San Diego Log* to feature "Do You Know…" pointers column on proper boating rules and environmental tips regarding safe boating in San Diego Bay. These would be selected from and provided by USCG Auxiliary materials, Port District Safe boating Guide, environmental Health Coalition's *Baywatch-A Guide for Boaters,* and other existing sources.

14. Convene a meeting as part of "Safe Boating Week" with OSPR, Coast Guard, Pilots, yacht club racing committees, and recreational boaters to evaluate anticipated race courses for the season, potential impacts on large vessel traffic, and to discuss ways to avoid conflict in the channel.

15. San Diego Harbor Safety Committee members and other volunteers will be available to public groups, marinas, yacht clubs, and other boating groups to speak on safety issues and educate about the potential problems in the Bay.

16. Explore options for requiring safe boating classes and/or Bay cleanup for those that are caught violating the law or otherwise endangering safety on the Bay.

17. Request the Department of Boating and Waterways, DMV, and lawmakers to require non-professional licenses, similar to automobile driver's licenses, for all boat operators. The SD HSC supports legislation requiring mandatory boater education

HARBOR SAFETY COMMITTEE ACCOMPLISHMENTS

1. Developed and published "Best Maritime Practices" for vessels operating in and around San Diego Bay.

2. Published information regarding the effects of sea and swell conditions in the main channel in the Coast Pilot.

3. Investigated the relocation of Buoys 16, 17, and 19; the elimination of Buoy 16A. A series of three Ship Simulation exercises using computerized interactive ships was carried out at Marine Safety International in 1997 to study this issue.

4. Installed frequency agile, dual frequency X and S band Radio Beacons (RACON) at the center span of the Coronado Bridge and Buoy SD "1".

5. Prohibited anchoring between the main ship channel and Shelter Island.

6. Supplied the Harbor Police with flyers to distribute to boaters from their patrol boats describing Rule 9.

7. Established MOU between Bay Pilots and Navy concerning communications.

8. Developed and installed permanent signs at four public launch ramps graphically depicting Rule 9 information.

9. Posted educational Rule 9 signs at every marina and most marine businesses in San Diego Bay.

10. Produced and installed Rule 9 decals on rental boats.

11. Developed a Speaker's Bureau. A list was developed soliciting participation by a wide range of volunteer speakers. A news release was submitted to the boating industry and major media. A mailing list of 22 boating and bay related groups was developed to receive the list of speakers.

12. Publicized availability of boater insurance rate discounts for graduates of safe boating classes.

13. Received news media coverage for SD HSC education issues.

14. Provided Rule 9 education materials at Coast Guard "Safe Boating Week" open house and at the festival "Day at the Docks."

15. Grant funds were applied for and obtained for HSC recreational boater education projects.

16. Aided in enforcement of Rule 9, by supplying Pilots with Harbor Police's dispatch number to immediately warn or ticket violators.

17. Minimum Visibility Guidelines established and published in Coast Pilot.

18. Underkeel Clearance Guidelines established.

19. Tug Escort Regulations established.

20. Funding obtained and consortium formed to develop VTIS system.

21. Addition of two more permanent aids to navigation to North Island mitigation area.

22. Completed “A GUIDE FOR BOATER SAFETY” pamphlet and distributed to local marina operators and boaters.

23. Provided a single contact point for representatives of the Red Bull Air Races to reach out to groups in the San Diego harbor complex that might have issues that needed to be addressed for the event to be permitted.

24. Participated in the Coast Guard’s Waterways Management Questionnaire (WAMS).

25. Potential hazard to navigation identified from sport fishing vessels using high intensity lights that were not properly shrouded in effect blinding other mariners. Outreach by Coast Guard to Sports Fishing Association of California addressed the issue.

26. Brought to the public’s attention — through the LOG and other outreach by committee members — the navigation hazard posed by poorly lighted bluefin tuna pens located between Ensenada and San Diego.

27. Continue to work on improving safety of navigation around the submerged Zuniga Jetty. The Zuniga Jetty is listed as a danger to navigation in US Coast Pilot 7 and is depicted ion chart18773 as submerged. In addition, the SD HSC noted the submerged Zuniga Jetty as hazard in the safe boating brochure “A Guide to Boater Safety, San Diego Bay.” (See Recommendation 3).

XIV. IMPLEMENTATION

The OSPR strategy for implementing the plan and plan implementation schedule dated February 14, 1996 is attached as Appendix N. Many of the actions include requests for investigations by the Coast Guard, CalTrans, OSPR and the San Diego Unified Port District. In addition, the SD HSC has formed subcommittees to evaluate and implement education and pilotage recommendations. A list of HSC recommendations that have been implemented is provided in the previous Chapter XIII.

XV. APPLICABLE REGULATIONS AND GUIDELINES

GUIDELINES FOR UNDERKEEL CLEARANCE IN SAN DIEGO BAY

These guidelines are for underkeel clearance during the normal weather conditions for San Diego Bay and its entrance channel. Generally, a maximum 34 foot still water draft provides an adequate safety margin for vessels entering and transiting the bay, and mooring at berths with at least 35 feet charted depth. This guidance sets forth recommended limits for vessels whose draft may equal or exceed 34 feet due to vessel loading, trim, list, squat, and heave. Any adverse weather conditions or abnormal bottom changes will require a case-by-case re-evaluation.

Underkeel clearance is understood to mean the minimum calculated clearance between the deepest point on the vessel and the bottom after tide (plus or minus), trim, list, squat[4], and expected heave due to the existing sea swell condition are taken into account. The underkeel clearance margins set forth in this guide provide the safety factor necessary to account for unpredictable variations in the bottom, the height of tide, vessel squat, and response of the vessel to the sea conditions.

Geographic Area of San Diego Bay	Underkeel Clearance Margin
a. Channel Entrance, between Buoy SD and Buoys 9 & 10	4 feet
b. Main Channel, between Buoys 9 & 10 and Buoys 40 &41	2 feet
c. Outside of Main Channel and at any berth[5]	1 foot

These guidelines are minimum standards. The pilot organization management, the vessel's master/operator and the Coast Guard should concur with any deviation below these standards.

NON-TANK VESSEL CONTINGENCY PLAN REGULATIONS

California's Nontank Vessel Contingency Plan Regulations (14 CCR §§825.01 – 827.02) stipulate that all nontank vessels of 300 gross tons or greater shall not operate in the State's marine waters (within 3 nautical miles of shore) unless the vessel owner or operator has a

[4] An estimate for squat can be calculated by using the formula:
Squat (in meters) = Cb x (V2 ÷ 100) where Cb = vessel's block coefficient, and V = vessel's speed in Knot

[5] NOTES: If the depth of the berth or anchorage for vessels to be moored, loaded or unloaded at a berth, or anchored when the published tidal depth within the next 24 hours (or the period prior to the vessel's departure, whichever is longer) will be less than the vessel's draft plus 1 foot, the vessel master, owners, operators, charterers or agents and the pilot shall first notify the U.S. Coast Guard Captain of the Port San Diego, the San Diego Unified Port District Marine Operations Department, and the San Diego Bay Pilots Associations, Inc. The notification by the vessel master, owners, operators, charterers or agents shall include the vessel's cargo operations plan for maintaining the recommended underkeel clearance at all times. A contingency plan should be outlined to take into account unexpected delays caused by mechanical failures of loading/unloading equipment or labor problems that may prevent a vessel from being unloaded and departing on schedule.

California approved oil spill contingency plan that provides response equipment, personnel, and procedures sufficient to respond to all spills up to the reasonable worst case spill.

These regulations can be found on the California Office of Spill Prevention and Response website, under the “law and regs” link http://www.dfg.ca.gov/ospr/law/regs.html.

TUG ESCORT REGULATIONS FOR TANK VESSELS

The San Diego Harbor Safety Committee submitted recommendations to the California Office of Spill Prevention and Response for Tug Escort Regulations, which OSPR subsequently promulgated. A copy of the 2005 Tug Escort Regulations (14 CCR Sections 852 - 852.6) is contained in the Appendix B. The most recent update of the Tug Escort regulations (14 CCR Sections 852 - 852.6) can be found on the California Office of Spill Prevention and Response website, under the “law and regs” link http://www.dfg.ca.gov/ospr/law/regs.html.

California’s Tug Escort Regulations for San Diego Bay (14 CCR Sections 852 - 852.6) stipulate that escort tugs shall be available to influence the speed and direction of travel of a tank vessel in the event of a casualty, or a steering or propulsion failure, thereby reducing the possibility of a grounding or collision and the risk of an oil spill.

XVI. MISCELLANEOUS

This section addresses the following issues that can impact safe navigation in the region including, but not limited to: (1) vessel pilotage evaluation; (2) vessel ballast procedures or requirements; (3) limited visibility guidelines; and (4) other areas of concern for navigational safety – underwater pipelines.

PILOTAGE EVALUATION

Pilotage in San Diego Bay is regulated by the Board of Port Commissioners of the San Diego Unified Port District in accordance with the San Diego Unified Port District Act (California Harbors and Navigation Code, Appendix 1). The Board assumed regulation of the San Diego harbor pilots in January 1971. This action followed the elimination of the Board of Pilot Commissioners for the harbor of San Diego resulting from the Governor's action to reorganize the executive branch of the California State Government and in the Reorganization Plan of 1969.

It is not mandatory that foreign vessels, U.S. vessels in foreign trade, or U.S. government vessels take a pilot in San Diego Bay. However, vessels over 300 GT are required to get the Coast Guard Captain of the Port permission and then notify both the San Diego Bay Pilots Association and the Port District's Marine Operations Office before transiting without a Pilot. In practice, all of the deep draft vessels do have a Pilot aboard while transiting.

Rules and regulations adopted by the Board govern pilots and pilotage within San Diego Bay. The Board's regulations address: the authorization and certification of pilots; qualifications for pilots including license and physical examination requirement; pilot rules of conduct; insurance; and pilot accountability including various reports required of pilots. The charges (rates, fees), rules pertaining to pilotage, and conditions upon which pilotage is provided, including a description of vessels subject to pilotage, are contained in the on the Port's website, under the tariff information link http://www.portofsandiego.org/maritime/tariff-info.html.

The San Diego Pilotage Advisory Council is made up of representatives of the State of California, Coast Guard, Industry, the Port and the Pilots. This council meets to discuss pilotage issues then makes recommendations to the Port of San Diego for implementation. The Port's Board determines, from time to time, the number of pilots required and by resolution designates the persons authorized to perform pilot services in an independent capacity and not as an officer, employee, agent, or independent contractor of the Port District.

Four "Authorized Pilots" for the Port of San Diego are organized as a single group and provide pilot services under the business name of San Diego Bay Pilots Association, Inc. A fifth relief "Authorized Pilot" is available if needed. The Port District does not specifically require that the pilots join together in association. The pilots maintain their own training program that includes training under the senior pilots prior to and following their designation by the Board.

The pilots administer their own work schedule through their Association and distribute the piloting tasks workload by a system of rotating periods of on-duty, stand-by, and off-duty/vacation shifts.

Compulsory Pilotage

The Coast Guard has indicated that it is engaged in a rule making process which is intended to mandate a federal licensed pilot be on board all vessels subject to pilotage when underway in any port in California. There is currently a Memorandum of Understanding under consideration between the State of California and the U.S. Coast Guard. The draft memorandum is contained in the archives.

The SD HSC has created the Pilotage Subcommittee (to examine all aspects of pilotage on San Diego Bay) and Education Subcommittee (to implement the educational recommendations), and has referred the appropriate recommendations to them.

Pilotage Subcommittee Actions

An analysis of commercial pilotage in San Diego Bay resulted in the several recommendations and implemented actions which are discussed in Chapter XIII. The full report with findings and adopted tables is archived at the San Diego Harbor Safety Committee's Secretariat's office.

VESSEL BALLAST PROCEDURES AND REQUIREMENTS

Ballast Water Regulations

California's new Ballast Water Management regulation for vessels operating with the Pacific Coast Region, promulgated by the California State Lands Commission pursuant to Public Resources Code 71204.5 became effective March 22, 2006.

The new regulation establishes a Pacific Coast Region, defined essentially as coastal waters ranging from the Aleutian Islands to near the tip of Baja California. Vessels taking ballast from ports within this region and traveling on coastal voyages must perform a coastal exchange at a minimum distance of 50 miles out and 200 meters depth prior to discharge in California.

Vessels arriving from outside Exclusive Economic Zone (EEZ), and therefore outside of the Pacific Coast Region, are still required to perform a mid-ocean exchange (minimum 200 miles out and at a minimum of 2000 meters depth) prior to discharging into California waters.

This is in conformity with International Maritime Organization (IMO) guidelines for coastal ballast water management, although IMO exemptions for deviation and delay are not provided under the California regulation. Vessel owners and operators may petition State Lands for Alternative Compliance measures. There are no set criteria for alternative compliance; they will be reviewed on a case-by-case basis.

Additional details about California's ballast water program and regulations can be found at the State Lands Commission website, under the Marine Invasive Species Program link http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Ballast_Water_Default.html

LIMITED VISIBILITY GUIDELINES

Currently, there are no requirements regarding navigation in reduced or restricted visibility beyond Rules of the Road. The Committee recognizes that there should be a greater standard of care for movement of vessels in poor visibility. The Committee feels that it is important to establish guidelines for navigation in limited visibility and intends to develop these guidelines. The SD HSC adopted the following guideline in FY 1996-1997, which is also included in the U.S. Coast Pilot 7 (41st Edition, 2009, Chapter 4, page 268, paragraph 47).

> *"No vessel over 1600 designed displacement tons should transit the Coronado Bay Bridge in low visibility if the bridge is not held visually within stopping distance. Tank ships or barges carrying petroleum products, explosives, or hazardous materials should not commence a movement in the approaches to or in outer or inner San Diego Harbor, with a visibility of less than .5 nautical miles (1,000 yards)."*

OTHER NAVIGATIONAL SAFETY CONCERNS: UNDERWATER OIL PIPELINES

Three major pipelines move fuel around and under San Diego Bay. A jet fuel pipeline carries jet fuel from Pt. Loma to Naval Air Station North Island. This pipeline runs underneath the mouth of San Diego Bay and is noted on the NOAA nautical chart as location 32/42/04.46N., 117/13/49.44. The second pipeline, which is not yet noted on the NOAA nautical chart, carries jet fuel from Pt. Loma to the Marine Corps Air Station Miramar.